DOCUMENT RESUME

ED 218 250 SP 020 394

AUTHOR Harris, I. David; Jones, Margaret A.
TITLE The Motor Performance Status of Elementary School Children in Georgia.
SPONS AGENCY Georgia Association of Health, Physical Education, and Recreation.; Georgia State Univ., Atlanta.; Kennesaw Coll. Marietta, GA.
PUB DATE Apr 82
NOTE 119p.; Paper presented at the Annual Meeting of the Georgia Association of Health, Physical Education, and Recreation (April 1-4, 1982). Some pages may have marginal reproducibility.

EDRS PRICE MF01/PC05 Plus Postage.
DESCRIPTORS Elementary Education; *Elementary School Students; Elementary School Teachers; Mathematics Achievement; Performance Factors; *Physical Fitness; *Psychomotor Skills; Reading Ability; Self Concept; Sex Differences; *State Norms
IDENTIFIERS *Georgia; Physical Education Teachers

ABSTRACT

This study was undertaken to determine the physical and motor fitness levels of elementary school students in Georgia. Components of the study included: (1) the students' physical and motor fitness levels when taught by physical education specialists and classroom teachers; (2) the relationship of motor performance variables to reading and mathematical abilities; and (3) the relationship of self concept to motor performance. Taking part in this study were 2,546 children in the second, fourth, and sixth grades, representing nineteen schools. Test results are displayed in 71 statistical tables. Highlights of findings are presented on: (1) sex differences; (2) specialist and classroom teacher differences; (3) right- and left-handed differences; (4) the relationship of reading and mathematics skills to motor performance variables; (5) the relationship of self concept to motor performance variables; (6) age relationship and motor performance variables; (7) reading, mathematics, and self concept relationships; and (8) differences among Georgia children and children tested by the American Alliance for Health, Physical Education, Recreation and Dance and those tested in Minnesota. Descriptions of the tests used are appended. (JD)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED218250

THE MOTOR PERFORMANCE STATUS OF ELEMENTARY SCHOOL CHILDREN IN GEORGIA

Compiled By

I. David Harris, Kennesaw College, Marietta, Georgia
Margaret A. Jones, Georgia State University, Atlanta, Georgia

April 3, 1982

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY
I. David Harris
Margaret A. Jones
TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

U.S. DEPARTMENT OF EDUCATION
NATIONAL INSTITUTE OF EDUCATION
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)
✓ This document has been reproduced as received from the person or organization originating it.
☐ Minor changes have been made to improve reproduction quality.
• Points of view or opinions stated in this document do not necessarily represent official NIE position or policy.

SP 020 394

PROJECT LEADERS:

I. David Harris, Kennesaw College
Margaret A. Jones, Georgia State University

PROJECT PERSONNEL:

Patricia Barnett, Clayton County Schools
Robbie Brawner, Cobb County Schools
Bobbie Cahoon, Retired
Michael Calhoun, Kennesaw College
Mary Czentnar, Georgia CESA
Ann Huber, Private School
Dan Jones, Emanuel Junior College
Dexter Mills, Cobb County Schools
Mary Womack, Atlanta City Schools
Personnel of Schools Participating in Study

STATISTICAL CONSULTANTS:

G. Rankin Cooter, Georgia State University
John H. Neel, Georgia State University
Doyice Cotton, Georgia Southern College
Center for Educational Research Personnel, Georgia State University

GENERAL CONSULTANTS:

Joanne R. Nurss, Georgia State University
Joe D. Willis, Georgia State University

SUPPORTED BY:

Georgia Association of Health, Physical Education and Recreation
Georgia State University
Kennesaw College

APPRECIATION TO:

Children and Personnel of Schools Participating in Study
Cobb County Administrators
Counselor Recordings and Tests, Nashville, Tennessee
Tupperware Educational Services, Orlando, Florida

Purchase Price
$3.50

TABLE OF CONTENTS

Table	Title	Page
	Background for Georgia Testing Project	1
1	Test Battery Variables	3
2	Demographic Data	4
	Location of Schools within Georgia Association of Educators Districts (figure1.)	5
3	Test Battery Rotation	6
4	USME Stopping Rule	6
	Review of Statistical Terms used in Report	7
5	Correlation Matrix of Motor Performance, Self Concept, Reading and Mathematics Variables for Second Grade Boys	9
6	Correlation Matrix of Motor Performance, Self Concept, Reading and Mathematics Variables for second grade girls	10
7	Correlation Matrix of Motor Performance, Self Concept, Reading and Mathematics variables for Fourth grade boys	11
8	Correlation Matrix of Motor Performance, Self Concept, Reading and Mathematics Variables for Fourth Grade girls	12
9	Correlation Matrix of Motor Performance, Self Concept, Reading and mathematics Variables for Sixth grade Boys	13
10	Correlation Matrix of Motor Performance, Self Concept, Reading and mathematics Variables for Sixth Grade girls	14
11	Hotelling T^2 Tests on Sex Group Means in Second Grade	15
12	Hotelling T^2 Tests on Sex Group Means in Fourth Grade	16
13	Hotelling T^2 Tests on Sex Group Means in Sixth Grade	17
14	Hotelling T^2 Tests on Teacher Group Means for Combined Sexes in Second Grade	18
15	Hotelling T^2 Tests on Teacher Group Means for Boys in Second Grade	19
16	Hotelling T^2 Tests on Teacher Group Means for Girls in Second Grade	20
17	Hotelling T^2 Tests on Teacher Group Means for Combined Sexes in Fourth Grade	21
18	Hotelling T^2 Tests on Teacher Group Means for Boys in Fourth Grade	22
19	Hotelling T^2 Tests on Teacher Group Means for Girls in Fourth Grade	23
20	Hotelling T^2 Tests on Teacher Group Means for Combined Sexes in Sixth Grade	24
21	Hotelling T^2 Tests on Teacher Group Means for Boys in Sixth Grade	25
22	Hotelling T^2 Tests on Teacher Group Means for Girls in Sixth Grade	26
23	Hotelling T^2 Test on Handedness Group Means for Combined Sexes in Second Grade	27
24	Hotelling T^2 Test on Handedness Group Means for Boys in Second grade	28
25	Hotelling T^2 Test on Handedness Group Means for Girls in Second Grade	29
26	Hotelling T^2 Test on Handedness Group Means for Combined Sexes in Fourth Grade	30
27	Hotelling T^2 Test on Handedness Group Means for Boys in Fourth Grade	31
28	Hotelling T^2 Test on Handedness Group Means for Girls in Fourth Grade	32
29	Hotelling T^2 Test on Handedness Group Means for Combined Sexes in Sixth Grade	33
30	Hotelling T^2 Test on Handedness Group means for Boys in Sixth Grade	34
31	Hotelling T^2 Test on Handedness Group Means for Girls in Sixth Grade	35
32	Reading Stepwise Regression Summary Tables for Second Grade	36
33	Reading Stepwise Regression Summary Tables for Fourth Grade	37
34	Reading Stepwise Regression Summary Tables for Sixth Grade	38

Table	Title	Page
35	Mathematics Stepwise Regression Summary Tables for Second Grade	39
36	Mathematics Stepwise Regression Summary Tables for Fourth Grade	40
37	Mathematics Stepwise Regression Summary Tables for Sixth Grade	41
38	Self Concept Stepwise Regression Summary Tables for Second Grade	42
39	Self Concept Stepwise Regression Summary Tables for Fourth Grade	43
40	Self Concept Stepwise Regression Summary Tables for Sixth Grade	44
41	Age Stepwise Regression Summary Tables for Second Grade	45
42	Age Stepwise Regression Summary Tables for Fourth Grade	46
43	Age Stepwise Regression Summary Tables for Sixth Grade	47
44	Prediction of Self Concept Variable for Reading	48
45	Prediction of Self Concept Variable for Mathematics	49
46	Prediction of Mathematics Variable for Reading	50
47	Percentile Norms and Other Normative Data for Jump and Reach (in) for Boys	51
48	Percentile Norms and other Normative Data for Jump and Reach (in) for Girls	53
49	Percentile Norms and other Normative Data for Sit-Ups for Boys	55
50	Percentile Norms and other Normative Data for Sit-Ups for Girls	57
51	Percentile Norms and other Normative Data for Flexed Arm Hang (sec) for Boys	59
52	Percentile Norms and other Normative Data for Flexed Arm Hang (sec) for Girls	61
53	Percentile Norms and other Normative Data for Soccer Wall Volley for Boys	63
54	Percentile Norms and other Normative Data for Soccer Wall Volley for Girls	65
55	Percentile Norms and other Normative Data for Sit and Reach (cm) for Boys	67
56	Percentile Norms and other Normative Data for Sit and Reach (cm) for Girls	69
57	Percentile Norms and other Normative Data for Shape-o-Ball (sec) for Boys	71
58	Percentile Norms and other Normative Data for Shape-o-Ball (sec) for Girls	73
59	Percentile Norms and other Normative Data for Zig Zag Run (sec) for Boys	75
60	Percentile Norms and other Normative Data for Zig Zag Run (sec) for Girls	77
61	Percentile Norms and other Normative Data for 600 Yard Walk-Run (sec) for Boys	79
62	Percentile Norms and other Normative Data for 600 Yard Walk-Run (sec) for Girls	81
63	Percentile Norms and other Normative Data for Self Concept for Boys	83
64	Percentile Norms and other Normative Data for Self Concept for Girls	85
65	Percentile Norms and other Normative Data for Reading for Boys	87
66	Percentile Norms and other Normative Data for Reading for Girls	89
67	Percentile Norms and other Normative Data for Mathematics for Boys	91
68	Percentile Norms and other Normative Data for Mathematics for Girls	93
69	Mean, Standard Deviation and T-Test for Jump and Reach and 600 Yard Walk-Run Scores for Georgia and Minnisota Elementary School Children	95
70	Mean, Standard Deviation and T-Test for Sit-Up Scores for Georgia and AAHPERD Elementary School Children	96
71	Mean, Standard Deviation and T-Test for Sit and Reach Scores for Georgia and AAHPERD Elementary School Children	97
	Highlights of Findings	97a
Appendix A	Test Battery: Physical Fitness and Motor Ability	98
	Bibliography	106

BACKGROUND FOR GEORGIA TESTING PROJECT

This study was undertaken to determine the physical and motor fitness levels of elementary school children in Georgia. Other components of the study included a) the physical and motor fitness levels of these children when taught by physical education specialists and classroom teachers b) the relationship of motor performance components to reading and mathematical abilities of these children, and c) the relationship of self concept to motor performance components. Taking part in this study were 2546 children in second, fourth, and sixth grades representing nineteen schools throughout the state of Georgia.

After a review of components of motor performance, the tests were selected on the basis of a) ease of administering to a large number of children, b) the test could be reliably administered, c) the test was an appropriate measure of motor performance, and d) availability of recent norms. A pilot study was undertaken of fourth grade children. The rail walk for balance and the wall pass for eye-hand coordination were eliminated due to their limited contribution to the test battery in the pilot study. Directions were utilized from the following test batteries: Minnesota Motor Performance Test (4)--soccer wall volley, jump and reach, and 600 yard walk-run; Health Related Physical Fitness Test Manual (1)--sit-ups and sit and reach; Texas Physical Fitness Test (6)--zig-zag run and flexed arm hang; and Shape-o-ball test (using three trials only) by Thomas and Chissom (7). See Table 1.

Of the number of self concept tests reviewed, the Piers-Harris Children's Self Concept Scale (1969) was utilized due to its availability, its reliability, and appropriateness of items to this age level.

The Georgia Criterion Referenced Test (1981) for reading and mathematical abilities was used since all schools were required to administer this test to the fourth grade children, and many schools administered it to second and sixth grade students. This test was administered in the Spring of the year.

A questionnaire was sent to the superintendents of all public school systems in Georgia concerning which reading and mathematic tests were administered, the economic and geographical make-up of the schools, and if physical education was taught by a specialist or the classroom teacher. A stratified random selection was made of schools: two from each Georgia Association of Educators districts; one having a physical education specialist for at least four years, and the other with no specialist during this time. Last minute rejections from several principals resulted in an adjusted schedule of schools which still reflected the demographics of Georgia: nine schools hired physical education specialists, nine did not; ten schools were considered middle class while eight were lower class economically; sixteen schools were geographically rural, two were in a populace of over 50,000, and one was a suburban school; and eight schools had gymnasiums while eleven had none. See Table 2 and Figure 1.

A schedule was established, testing one school per day. A nucleus of professionals and trained local personnel collected the data. The order in which the children were tested was determined by local personnell, usually second grade came first. A short introduction was given to the children concerning the "challenges" to be undertaken. Then the children were divided into seven groups and rotated in a specific order to vary the muscle groups and for consistency of the fatigue factor. See Table 3. The 600 yard walk-run was administered at the end of the testing period. The self concept test was administered in the classroom setting during the same day. Each item was read to the children in all grades. The results of the reading and mathematics scores were sent by the principals as soon as they were available.

The scores of all tests were tabulated. To determine the relationship between self concept, reading, mathematics, and age and the eight motor performance variables, the stepwise regression analysis with a subsequent UMSE stopping rule was utilized on the data analysis for three groups 1) total subjects 2) boys only and 3) girls only, in each of the three grade levels. To determine any differences between specialists and classroom teachers, sex, and handedness, the Hotelling T^2 analysis was utilized. The t-test was run on the individual variables as a cross check with the Hotelling T^2 results.

The data were prepared for this report for GAHPER members and will be disseminated to any interested parties upon request. The schools which participated will be given a copy as well as a report on the results of their own school.

TABLE 1

TEST BATTERY VARIABLES

TEST SOURCE	PERFORMANCE VARIABLES	RELIABILITY COEFFICIENTS
MINNESOTA MOTOR PERFORMANCE	SOCCER WALL VOLLEY (EYE-FOOT COORDINATION)	r = .63 BOYS .59 GIRLS
MINNESOTA MOTOR PERFORMANCE	JUMP AND REACH (POWER)	r = .84 BOYS .79 GIRLS
MINNESOTA MOTOR PERFORMANCE	600 YARD WALK RUN (ENDURANCE)	r = .86 BOYS .77 GIRLS
AAHPERD HEALTH RELATED PHYSICAL FITNESS TEST MANUAL (1980)	SIT UPS (ABDOMINAL MUSCULAR STRENGTH AND ENDURANCE)	r = .68 TO .94
AAHPERD HEALTH RELATED PHYSICAL FITNESS TEST MANUAL (1980)	SIT AND REACH (FLEXIBILITY OF LOWER BACK AND POSTERIOR THIGH)	r = .80 AND .90
TEXAS PHYSICAL FITNESS-MOTOR ABILITY TEST	ZIG ZAG RUN (RUNNING AGILITY)	
TEXAS PHYSICAL FITNESS-MOTOR ABILITY TEST	FLEXED-ARM HANG (ARM MUSCULAR STRENGTH AND ENDURANCE)	r = UP TO .9[illegible]
THOMAS AND CHISSOM	SHAPE-O-BALL (TUPPERWARE) (PERCEPTUAL-MOTOR TASKS FOR SHAPE RECOGNITION, PERCEPTUAL MATCH, AND EYE-HAND COORDINATION)	r = .81 TO .98

TABLE 2

Demographic Data

School Number	District Number	Specialist or Classroom Teacher	Economic Status	Geographical Position	Gymnasium	Second Grade Boy	Second Grade Girl	Fourth Grade Boy	Fourth Grade Girl	Sixth Grade Boy	Sixth Grade Girl
1	1	Classroom	Middle	Rural	Yes	13	11	11	8	9	14
2	3	Specialist	Low	Rural	No	31	59	41	39	0	0
3	3	Classroom	Low	Rural	No	16	12	13	21	23	8
4	4	Specialist	Middle	Rural	Yes	30	16	24	38	0	0
5	4	Specialist	Middle	Suburban	No	30	23	33	21	25	24
6	4	Classroom	Low	Rural	No	25	18	20	23	22	26
7	5	Specialist	Middle	Over 50,000	No	31	31	36	28	29	34
8	5	Classroom	Low	Over 50,000	No	18	17	31	15	23	18
9	6	Specialist	Middle	Rural	No	22	18	21	23	20	29
10	6	Classroom	Low	Rural	No	14	20	27	7	24	26
11	7	Specialist	Middle	Rural	Yes	35	34	35	42	22	22
12	7	Classroom	Middle	Rural	No	29	24	29	25	32	23
*13	8	Specialist	Low	Rural	Yes	11	12	23	20	0	0
*14	8	Specialist	Low	Rural	No	0	0	0	0	28	38
15	8	Classroom	Low	Rural	Yes	32	26	28	26	10	24
16	9	Specialist	Middle	Rural	Yes	45	34	43	40	33	21
17	9	Classroom	Middle	Rural	No	13	15	22	20	19	19
18	9	Classroom	Middle	Rural	Yes	53	33	43	50	0	0
19	10	Specialist	Low	Rural	Yes	17	21	25	26	27	27
	Totals	9 Specialist	10 Middle	16 Rural	8 Gyms	455	424	505	463	346	353
		9 Classroom	8 Low	2 over 50,000	11 None	879		968		699	
				1 suburban				2564			

*School 13 housed second and fourth grades; school 14 housed the sixth grade.

Figure 1. Location of schools within Georgia Association of Educators Districts

TABLE 3

TEST BATTERY ROTATION

STATION	VARIABLE
1	JUMP AND REACH
2	SIT UP
3	SHAPE-O-BALL
4	ZIG ZAG RUN
5	FLEXED ARM HANG
6	SOCCER WALL VOLLEY
7	SIT AND REACH
-- -- -- -- -- -- -- -- -- -- -- -- -- -- --	
8	600 YARD WALK-RUN

TABLE 4

UMSE STOPPING RULE FORMULA

$$UMSE_q = \frac{(n^2-n-2)(n-1)sy^2\ (1-R^2)}{n(n-q-1)(n-q-2)}$$

q = Regression Step Number

R = Multiple Correlation

sy^2 = Standard Deviation^2

REVIEW OF STATISTICAL TERMS USED IN REPORT

N is the number of cases in a group of data.

Mean is the average of scores for a given group of data.

Standard Deviation (SD) is a measure of variablilty of a set of scores. Plus or minus one standard deviation describes the middle 68.26 percent of the distribution about the mean. The more the score cluster around the mean, the smaller the deviation.

Standard Error of Mean (SE) is the standard deviation of the mean and describes the variability of a statistic over repeated sampling. Usually the more the cases, the less is the standard error and the more accurate (reliable) are the scores obtained.

Median (Mdn) is the point in a distribution above which and below which 50 percent of the scores lie.

Mode (Mo) is that score which occurs most frequently in a distribution.

Skewness (Sk) refers to the symmetry of the frequency distribution and is found when the mean, medium and mode fall at different points in the distribution, causing balance to shift to the right or left. In a normal distribution, the mean equals the medium and skewness is 0. Negative skewness occurs when scores are massed at the high end or right side of the scale. Positive skewness occurs when larger frequencies are at the low end or left side of the scale.

Fig.1

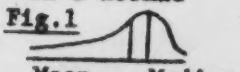
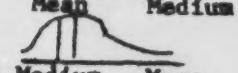


Fig.2



Kurtosis (K) refers to the flatness or peakedness of a frequency distribution. A normal curve (mesokurtic) is 0.263. If kurtosis is greater than 0.263, the distribution is platykurtic or flatter. If kurtosis is less than 0.263, the distribution is leptokurtic or more peaked than normal.

Degrees of Freedom (df) is the number of values that are free to vary and is dependent upon the number of restrictions placed upon the data. One degree of freedom is lost for each restriction (parameter) imposed.

p Value is the probability that the difference is due to chance alone. For example, $p < .05$ states there is a five percent probability that the difference is due to chance and a 95 percent probability that the difference is real.

t-Test is used to determine if there is a difference between two independent means, i.e., sex, on a single variable, i.e., sit-ups only. If a negative sign appears, it means the second group listed has a larger mean. A smaller mean is desirable for 600 yard walk run, shape-o-ball, and zig-zag run variables.

Percentile tells what proportion of the group scored below that person, i.e., 80th percentile rank means that 80 percent of the people taking the test had scores equal to or lower than that and 20 percent had higher scores. If a score falls between percentile rankings, it is recommended that a student not be given the higher percentile until he/she actually attains it.

Hotelling T^2 is a multivariate analysis which adjusts the correlation among dependent variables and describes the difference between the group means, i.e., sex difference between boys and girls, using an entire set of dependent variables, i.e., sit-ups, jump and reach, etc. If results are significant, it means that on all of those variables when considered together, the groups are different. If results are not significant, it means that on all of those variables when considered together, the groups are alike and any differences are by chance.

F Ratio indicates the degree of difference between variables. The test of significance is used to determine if the prediction equation is a more accurate prediction than would be possible by chance alone.

Beta Weights are used to show which predictor variables contribute most to successful prediction. The predictor variable that has the largest beta weight disregarding positive or negative signs is best predictor.

Correlation Coefficient (Simple r) indicates the degree of likeness or relationship between two variables. The closer relationship the variables have, the closer the correlation coefficient will be to 1.0. Negative correlations represent an inverse relationship. Since best scores are low scores for 600 yard run, shape-o-ball, and zig zag run variables, inverse relationships should exist with variables such as sit-ups in which high scores are best scores.

Multiple Correlation (Multiple R) is used to determine the prediction capabilities of several variables on a criterion variable, i.e., self concept. The first predictor variable, i.e., sit-ups, was the highest predictor of self concept because it explained the largest percent of variance. The second variable to enter is that variable which explains the most variance in conjunction with the variable already in the equation. New variables are added until either all variables have been entered (maximum step reached) or the tolerance level is insufficient to improve the prediction.

SPSS Stepwise Multiple Regression Procedure used in this study is a forward selection procedure. Independent variables are entered only if they meet certain statistical criteria. The order of inclusion is determined by the respective contribution of each variable to explain the variance.

UMSE Stopping Rule. The unconditional mean square error of prediction stopping rule is a criterion to measure how well variables selected by forward selection procedure (SPSS stepwise multiple regression) would predict if a new sample was used. Stopping occurs when UMSE value is minimized.

Coefficient of Determination (R^2) reveals the percent of overlap between variables or the proportion of variance of the criterion accounted for by the sum of the predictor variables. It is the percent of time that improvement of one variable (or a group of variables) could predict the improved outcome of another variable.

TABLE 5

CORRELATION MATRIX OF MOTOR PERFORMANCE, SELF CONCEPT, READING AND MATHEMATICS VARIABLES FOR SECOND GRADE BOYS

VARIABLES	Jump and Reach	Sit-Ups	Flexed Arm Hang	Soccer Wall Volley	Sit and Reach	Shape-o-Ball	Zig-Zag Run	600 Yard Walk Run	Self Concept	Reading	Mathematics
Jump & Reach	1.0000	0.3970 (434) p<0.001	0.1856 (435) p<0.001	0.2294 (434) p<0.001	0.0918 (435) p=0.028	-0.0369 (435) p=0.221	-0.1058 (408) p=0.016	-0.3055 (406) p<0.001	0.1485 (420) p=0.001	0.0139 (325) p=0.401	-0.0129 (325) p=0.409
Sit-Ups		1.0000	0.3177 (434) p<0.001	0.2454 (433) p<0.001	0.0283 (434) p=0.278	-0.0839 (434) p=0.040	-0.2432 (407) p<0.001	-0.3478 (405) p<0.001	0.1836 (419) p<0.001	0.0253 (324) p=0.325	-0.1132 (324) p=0.021
Flexed-Arm Hang			1.0000	0.2597 (434) p<0.001	0.0273 (435) p=0.285	-0.1594 (435) p<0.001	-0.2318 (408) p<0.001	-0.3922 (406) p<0.001	0.0880 (420) p=0.036	0.0387 (325) p=0.243	0.0740 (325) p=0.092
Soccer Wall Volley				1.0000	0.3840 (434) p=0.040	-0.2537 (434) p<0.001	-0.2558 (407) p<0.001	-0.3442 (405) p<0.001	0.1373 (419) p=0.002	0.1308 (324) p=0.009	0.2315 (324) p<0.001
Sit and Reach					1.0000	-0.0807 (435) p=0.046	-0.1428 (408) p=0.002	0.0140 (406) p=0.390	-0.0051 (420) p=0.458	0.1225 (325) p=0.014	0.1264 (325) p=0.011
Shape-o-Ball						1.0000	0.3829 (408) p<0.001	0.2277 (406) p<0.001	-0.0921 (420) p=0.030	-0.1861 (325) p<0.001	-0.2360 (325) p<0.001
Zig-Zag Run							1.0000	0.3411 (406) p<0.001	-0.0677 (405) p=0.169	-0.1933 (311) p<0.001	-0.2075 (311) p<0.001
600 Yard Walk Run								1.0000	-0.1663 (403) p<0.001	-0.1111 (309) p=0.025	-0.1594 (309) p=0.002
Self Concept									1.0000	0.1430 (327) p=0.005	0.0929 (327) p=0.047
Reading										1.0000	0.7298 (329) p<0.001
Mathematics											1.0000

Correlation Coefficient / Significance.

TABLE 6

CORRELATION MATRIX OF MOTOR PERFORMANCE, SELF CONCEPT, READING AND MATHEMATICS VARIABLES FOR SECOND GRADE GIRLS

VARIABLES	Jump and Reach	Sit-Ups	Flexed Arm Hang	Soccer Wall Volley	Sit and Reach	Shape-o-Ball	Zig-Zag Run	600 Yard Walk Run	Self Concept	Reading	Mathematics
Jump & Reach	1.0000	0.2704 (404) p<0.001	0.1534 (403) p=0.001	0.2203 (406) p<0.001	0.0624 (405) p=0.105	0.0369 (404) p=0.230	-0.0936 (387) p=0.033	-0.2339 (383) p<0.001	0.0969 (393) p=0.027	0.0085 (299) p=0.442	0.0373 (299) p=0.260
Sit-Ups		1.0000	0.2695 (401) p<0.001	0.1793 (404) p<0.001	0.0303 (403) p=0.272	-0.0319 (402) p=0.262	-0.1800 (385) p<0.001	-0.2826 (381) p<0.001	0.0646 (391) p=0.101	0.1111 (299) p=0.027	0.0681 (299) p=0.120
Flexed-Arm Hang			1.0000	0.1329 (403) p=0.004	0.1250 (402) p=0.006	-0.0020 (401) p=0.484	-0.0756 (385) p=0.069	-0.4315 (381) p<0.001	0.0414 (390) p=0.208	0.0422 (298) p=0.234	0.0558 (298) p=0.169
Soccer Wall Volley				1.0000	0.1224 (405) p=0.007	-0.1454 (404) p=0.002	-0.2360 (387) p<0.001	-0.2931 (383) p<0.001	0.0732 (393) p=0.074	0.0900 (299) p=0.060	0.2119 (299) p<0.001
Sit and Reach					1.0000	-0.1272 (403) p=0.005	-0.1338 (386) p=0.004	-0.1252 (382) p=0.007	0.0913 (392) p=0.036	0.1511 (298) p=0.005	0.1525 (298) p=0.004
Shape-o-Ball						1.0000	0.3288 (385) p<0.001	-0.2181 (381) p=0.362	-0.0165 (393) p=0.372	-0.2535 (297) p<0.001	-0.3306 (297) p<0.001
Zig-Zag Run							1.0000	0.1372 (383) p=0.004	-0.0134 (382) p=0.397	-0.0618 (291) p=0.147	0.0060 (291) p=0.459
600 Yard Walk Run								1.0000	-0.1637 (378) p=0.001	-0.1502 (287) p=0.005	-0.1477 (287) p=0.006
Self Concept									1.0000	0.1325 (301) p=0.011	0.1683 (301) p=0.002
Reading										1.0000	0.7230 (306) p<0.001
Mathematics											1.0000

Correlation Coefficient, (Number of Cases), Significance.

TABLE 7

CORRELATION MATRIX OF MOTOR PERFORMANCE, SELF CONCEPT, READING AND MATHEMATICS VARIABLES FOR FOURTH GRADE BOYS

VARIABLES	Jump and Reach	Sit-Ups	Flexed Arm Hang	Soccer Wall Volley	Sit and Reach	Shape-o-Ball	Zig-Zag Run	600 Yard Walk Run	Self Concept	Reading	Mathematics
Jump & Reach	1.0000	0.3563 (432) p<0.001	0.2789 (432) p<0.001	0.1364 (433) p=0.002	0.0116 (433) p=0.405	-0.0133 (432) p=0.391	-0.1991 (433) p<0.001	-0.3531 (430) p<0.001	0.2180 (431) p<0.001	0.0173 (377) p=0.369	0.0450 (377) p=0.192
Sit-Ups		1.0000	0.2792 (434) p<0.001	0.1050 (435) p=0.014	0.0711 (435) p=0.069	0.0389 (434) p=0.210	-0.2444 (435) p<0.001	-0.3454 (432) p<0.001	0.1452 (433) p=0.001	-0.0012 (380) p=0.491	0.0227 (380) p=0.329
Flexed-Arm Hang			1.0000	0.2126 (435) p<0.001	0.1606 (435) p<0.001	-0.1158 (434) p=0.008	-0.2245 (435) p<0.001	-0.4382 (432) p<0.001	0.1979 (433) p<0.001	0.0617 (379) p=0.115	0.1126 (379) p=0.014
Soccer Wall Volley				1.0000	0.1189 (436) p=0.006	-0.1976 (435) p<0.001	-0.2292 (437) p<0.001	-0.2399 (434) p<0.001	0.1013 (434) p=0.017	0.0643 (381) p=0.105	0.1062 (381) p=0.019
Sit and Reach					1.0000	-0.1121 (435) p=0.010	-0.1704 (436) p<0.001	-0.0674 (433) p=0.081	0.0784 (434) p=0.051	0.1260 (380) p=0.007	0.1224 (380) p=0.008
Shape-o-Ball						1.0000	0.1869 (435) p<0.001	0.0703 (433) p=0.072	-0.0944 (433) p=0.025	-0.2725 (379) p<0.001	-0.2753 (379) p<0.001
Zig-Zag Run							1.0000	0.2445 (434) p<0.001	-0.1771 (434) p<0.001	-0.1496 (381) p=0.002	-0.1915 (381) p<0.001
600 Yard Walk Run								1.0000	-0.1929 (451) p<0.001	-0.0564 (396) p=0.131	-0.0422 (396) p=0.201
Self Concept									1.0000	0.2109 (432) p<0.001	0.2240 (432) p<0.001
Reading										1.0000	0.8064 (434) p<0.001
Mathematics											1.0000

Correlation Coefficient, (Number of Cases), Significance.

TABLE 8

CORRELATION MATRIX OF MOTOR PERFORMANCE, SELF CONCEPT, READING AND MATHEMATICS VARIABLES FOR FOURTH GRADE GIRLS

VARIABLES	Jump and Reach	Sit-Ups	Flexed Arm Hang	Soccer Wall Volley	Sit and Reach	Shape-o-Ball	Zig-Zag Run	600 Yard Walk Run	Self Concept	Reading	Mathematics
Jump & Reach	1.0000	0.2469 (390) p<0.001	0.2187 (390) p<0.001	0.2206 (391) p<0.001	0.1493 (392) p=0.002	-0.0656 (391) p=0.098	-0.1469 (391) p=0.002	-0.2225 (385) p<0.001	0.0987 (390) p=0.026	-0.0433 (349) p=0.210	-0.0148 (349) p=0.392
Sit-Ups		1.0000	0.2363 (390) p<0.001	0.0020 (391) p=0.484	0.1782 (391) p<0.001	-0.0411 (391) p=0.209	-0.1642 (391) p=0.001	-0.2344 (385) p<0.001	-0.0195 (389) p=0.351	-0.0458 (348) p=0.197	-0.0078 (348) p=0.443
Flexed-Arm Hang			1.0000	0.2568 (391) p<0.001	0.2298 (391) p<0.001	-0.1510 (391) p=0.001	-0.2161 (391) p<0.001	-0.3775 (385) p<0.001	0.0813 (389) p=0.055	0.1208 (348) p=0.012	0.1338 (348) p=0.0[illegible]
Soccer Wall Volley				1.0000	0.1769 (392) p<0.001	-0.1721 (392) p<0.001	-0.2695 (392) p<0.001	-0.2196 (386) p<0.001	0.2468 (390) p<0.001	0.0112 (349) p=0.417	0.1301 (349) p=0.007
Sit and Reach					1.0000	-0.1412 (392) p=0.003	-0.2917 (392) p<0.001	-0.0921 (386) p=0.035	-0.0428 (391) p=0.200	0.1597 (350) p=0.001	0.1629 (350) p=0.001
Shape-o-Ball						1.0000	0.3265 (392) p<0.001	0.0928 (386) p=0.034	0.0272 (390) p<0.296	-0.2939 (349) p<0.001	-0.3530 (349) p<0.001
Zig-Zag Run							1.0000	0.1896 (386) p<0.001	-0.1291 (390) p=0.005	-0.1660 (349) p=0.001	-0.2722 (349) p<0.001
600 Yard Walk Run								1.0000	-0.2136 (407) p<0.001	-0.0294 (365) p=0.288	-0.0635 (365) p=0.113
Self Concept									1.0000	0.3584 (400) p<0.001	0.2451 (400) p<0.001
Reading										1.0000	0.8016 (402) p<0.001
Mathematics											1.0000

Correlation Coefficient, (Number of Cases), Significance.

TABLE 9

CORRELATION MATRIX OF MOTOR PERFORMANCE, SELF CONCEPT, READING AND MATHEMATICS VARIABLES FOR SIXTH GRADE BOYS

VARIABLES	Jump and Reach	Sit-Ups	Flexed Arm Hang	Soccer Wall Volley	Sit and Reach	Shape-o-Ball	Zig-Zag Run	600 Yard Walk Run	Self Concept	Reading	Mathematics
Jump & Reach	1.0000	0.1898 (321) p<0.001	0.3282 (320) p<0.001	0.1689 (319) p=0.001	-0.1470 (320) p=0.004	0.0651 (320) p=0.123	-0.1784 (320) p=0.001	-0.3586 (311) p<0.001	0.1200 (315) p=0.017	-0.0461 (247) p=0.236	0.0023 (247) p=0.486
Sit-Ups		1.0000	0.3150 (320) p<0.001	0.1807 (319) p=0.001	0.1855 (320) p<0.001	-0.0195 (320) p=0.364	-0.3457 (320) p<0.001	-0.4830 (312) p<0.001	0.1644 (316) p=0.002	-0.0433 (247) p=0.248	0.0379 (247) p=0.227
Flexed-Arm Hang			1.0000	0.2326 (318) p<0.001	0.1519 (319) p=0.003	0.0110 (321) p=0.422	-0.2514 (321) p<0.001	-0.4716 (310) p<0.001	0.1305 (315) p=0.010	0.0437 (247) p=0.160	0.1400 (247) p=0.014
Soccer Wall Volley				1.0000	0.1410 (318) p=0.006	-0.1413 (318) p=0.006	-0.3592 (318) p<0.001	-0.2414 (309) p<0.001	0.1768 (313) p=0.001	0.0382 (245) p=0.449	0.0862 (245) p=0.089
Sit and Reach					1.0000	-0.0320 (319) p=0.284	-0.1881 (319) p<0.001	-0.0845 (310) p=0.069	-0.0614 (314) p=0.139	0.1084 (246) p=0.045	0.1991 (246) p=0.001
Shape-o-Ball						1.0000	0.2170 (321) p<0.001	0.0468 (310) p=0.206	-0.0464 (315) p=0.206	-0.2279 (247) p<0.001	-0.3085 (247) p<0.001
Zig-Zag Run							1.0000	0.3264 (310) p<0.001	-0.0615 (315) p=0.138	-0.0283 (247) p=0.329	-0.0744 (247) p=0.122
600 Yard Walk Run								1.0000	-0.0711 (328) p=0.100	0.0394 (238) p=0.273	0.0279 (238) p=0.334
Self Concept									1.0000	0.2322 (243) p<0.001	0.2217 (243) p<0.001
Reading										1.0000	0.7204 (248) p<0.001
Mathematics											1.0000

Correlation Coefficient, (Number of Cases), Significance.

TABLE 10

CORRELATION MATRIX OF MOTOR PERFORMANCE, SELF CONCEPT, READING AND MATHEMATICS VARIABLES FOR SIXTH GRADE GIRLS

VARIABLES	Jump and Reach	Sit-Ups	Flexed Arm Hang	Soccer Wall Volley	Sit and Reach	Shape-o-Ball	Zig-Zag Run	600 Yard Walk Run	Self Concept	Reading	Mathematics
Jump & Reach	1.0000	0.1596 (325) p=0.002	0.1631 (323) p=0.002	0.1119 (325) p=0.022	-0.1953 (325) p<0.001	0.1053 (325) p=0.029	-0.0369 (325) p=0.254	-0.1252 (312) p=0.013	0.0119 (324) p=0.416	-0.-434 (242) p=0.251	-0.0969 (242) p=0.089
Sit-Ups		1.0000	0.3972 (327) p<0.001	0.2558 (327) p<0.001	0.2296 (327) p<0.001	-0.0868 (329) p=0.058	-0.4220 (329) p<0.001	-0.3973 (315) p<0.001	0.1571 (329) p=0.002	0.0394 (245) p=0.270	0.0765 (245) p=0.116
Flexed-Arm Hang			1.0000	0.2007 (325) p<0.001	0.1788 (325) p=0.001	-0.0405 (327) p=0.233	-0.2953 (327) p<0.001	-0.4124 (313) p<0.001	0.1285 (326) p=0.010	0.0912 (242) p=0.079	0.0762 (242) p=0.119
Soccer Wall Volley				1.0000	0.2384 (327) p<0.001	-0.0886 (327) p=0.055	-0.2913 (327) p<0.001	-0.2613 (314) p<0.001	0.1813 (326) p=0.001	0.0452 (243) p=0.242	0.1501 (243) p=0.010
Sit and Reach					1.0000	-0.1897 (327) p<0.001	-0.2830 (327) p<0.001	-0.1600 (314) p=0.002	0.1066 (326) p=0.027	0.0873 (243) p=0.087	0.0694 (243) p=0.141
Shape-o-Ball						1.0000	0.2755 (329) p<0.001	0.0340 (314) p=0.274	-0.0999 (328) p=0.035	-0.2955 (244) p<0.001	-0.3971 (244) p<0.001
Zig-Zag Run							1.0000	0.2745 (314) p<0.001	-0.1474 (328) p=0.004	-0.1198 (244) p=0.031	-0.2061 (244) p=0.001
600 Yard Walk Run								1.0000	-0.0643 (333) p=0.121	0.0591 (233) p=0.184	-0.0460 (233) p=0.242
Self Concept									1.0000	0.1161 (246) p=0.035	0.1353 (246) p=0.017
Reading										1.0000	0.6313 (247) p<0.001
Mathematics											1.0000

Correlation Coefficient, (Number of Cases), Significance.

TABLE 11

Hotelling T^2 Tests on Sex Group Means in Second Grade

Difference Among Sex Groups Means Using Motor Performance Variables:

Hotelling T^2 = 155.75 F=19.30 p<.001 df=8,809 *

Difference Among Sex Group Means Using All Variables:

Hotelling T^2=180.44 F=16.17 p<.001 df=11,729 *

Difference on Single Motor Performance Variables:

Sex	Mean	SD	Score Range High	Low	N	t Value/ p Value
Jump and Reach(in):						
Boy	8.30	2.10	15	0	435	4.76
Girl	7.65	1.86	14	2	406	p<.001*
Sit-Ups:						
Boy	24.77	8.23	50	0	434	1.42
Girl	23.99	7.64	50	0	404	p=.156
Flexed Arm Hang(sec):						
Boy	18.52	13.42	90	0	435	3.34
Girl	15.58	12.13	84	0	403	p=.001*
Soccer Wall Volley:						
Boy	22.43	4.94	37	7	434	8.63
Girl	19.58	4.59	38	6	406	p<.001*
Sit and Reach (cm):						
Boy	25.18	5.83	43	6	435	-5.24
Girl	27.22	5.44	41	7	405	p<.001*
Shape-o-Ball(sec):						
Boy	208.52	71.28	88	696	435	-0.45
Girl	210.71	69.24	97	513	405	p=.652
Zig Zag Run(sec):						
Boy	29.77	3.83	23	54	408	-5.68
Girl	31.31	3.84	20	49	382	p<.001*
600 Yard Walk-Run(sec):						
Boy	192.89	37.57	140	448	416	-5.98
Girl	207.16	29.78	147	311	387	p<.001*

Difference on Other Single Variables:

Self Concept (80 is maximum score):						
Boy	56.34	11.82	77	18	431	-1.34
Girl	57.43	11.74	79	12	407	p=.181
Reading (25 is maximum score in second grade 20 in fourth and sixth grades):						
Boy	18.64	5.69	25	1	329	-3.56
Girl	20.21	5.41	25	1	306	p<.001*
Mathematics (20 is maximum score):						
Boy	15.71	4.11	20	1	329	0.83
Girls	15.43	4.35	20	1	306	p=.405

*Significant at p ≤.001.
Best mean is underlined.

TABLE 12

Hotelling T^2 Tests on Sex Group Means in Fourth Grade

Difference Among Sex Group Means Using Motor Performance Variables:

Hotelling T^2=274.3[illegible] F=33.98 p<.001 df=8,816 *

Difference Among Sex Group Means Using All Variables:

Hotelling T^2=297.51 F=26.70 p<.001 df=11,791 *

Difference on Single Motor Performance Variables:

Sex	Mean	SD	Score Range High	Low	N	t Value/ p Value
Jump and Reach(in):						
Boy	10.43	2.60	19	2.0	433	9.37
Girl	8.88	2.15	16	3.5	392	p<.001*
Sit-Ups:						
Boy	28.38	8.68	52	0	435	5.09
Girl	25.47	7.75	46	0	391	p<.001*
Flexed Arm Hang(sec):						
Boy	23.22	16.40	90	0	435	6.87
Girl	15.96	13.98	90	0	391	p<.001*
Soccer Wall Volley						
Boy	28.63	6.12	50	12	437	8.05
Girl	25.31	5.70	46	13	392	p<.001*
Sit and Reach(cm):						
Boy	25.58	5.84	43	8	436	-5.65
Girl	27.96	6.24	44	3	393	p<.001*
Shape-o-Ball(sec):						
Boy	158.53	46.64	78	409	435	-0.17
Girl	159.17	58.22	76	696	392	p=.864
Zig Zag Run(sec)						
Boy	26.88	2.47	21	41	437	-8.92
Girl	28.54	2.84	23	39	392	p<.001*
600 Yard Walk-Run(sec)						
Boy	177.89	32.95	124	293	454	-8.81
Girl	198.78	36.34	137	416	409	p<.001*
Difference on Other Single Variables:						
Self Concept (80 is maximum score):						
Boy	55.58	12.22	15	79	502	-0.20
Girl	55.75	12.80	11	80	461	p=.838
Reading (20 is maximum score):						
Boy	14.62	5.04	20	0	434	-3.85
Girl	15.84	4.16	20	2	402	p<.001
Mathematics (20 is maximum score):						
Boy	14.39	5.09	20	0	434	-0.94
Girl	14.71	4.71	20	1	402	p=.348

*Significant at p ≤.001
Best mean is underlined.

TABLE 13

Hotelling T^2 Tests on Sex Group Means in Sixth Grade

Difference Among Sex Group Means Using Motor Performance Variables:

Hotelling T^2=276.10 F=34.11 p<.001 df=8,633*

Difference Among Sex Group Means Using All Variables:

Hotelling T^2=258.49 F=23.07 p<.001 df=11,572*

Difference on Single Motor Performance Variables:

Sex	Mean	SD	Score Range High	Score Range Low	N	t Value* p Value
Jump and Reach (in):						
Boy	12.89	3.75	31	5.5	321	5.22
Girl	11.37	3.64	31	4.0	325	p<.001*
Sit-Ups:						
Boy	32.93	9.53	57	3	322	5.37
Girl	29.05	8.92	57	0	330	p<.001*
Flexed Arm Hang(sec):						
Boy	26.25	20.04	90	0	321	7.22
Girl	16.48	13.78	90	0	327	p<.001*
Soccer Wall Volley:						
Boy	33.46	6.94	57	15	319	8.90
Girl	29.00	5.71	48	16	327	p<.001*
Sit and Reach(cm):						
Boy	25.46	6.95	44	7	320	-6.54
Girl	28.94	6.59	45	9	327	p<.001*
Shape-o-Ball(sec):						
Boy	131.58	45.02	62	497	321	0.87
Girl	128.69	39.46	65	322	329	p=.384
Zig Zag Run (sec):						
Boy	25.15	2.16	21	33	321	-9.89
Girl	26.89	2.35	22	37	329	p<.001*
600 Yard Walk-Run(sec):						
Boy	162.56	35.85	111	329	332	-8.72
Girl	186.54	35.08	115	373	333	p<.001*
Difference on Other Single Variables						
Self Concept (80 is maximum score):						
Boy	57.00	11.74	79	21	340	1.46
Girl	56.68	12.14	78	21	352	p=.145
Reading (20 is maximum score):						
Boy	14.80	5.22	20	0	248	-3.12
Girl	16.15	4.40	20	0	247	p=.002*
Mathematics (20 is maximum score):						
Boy	10.14	5.69	20	0	248	-1.26
Girl	10.79	5.85	20	0	247	p=.209

*Significant at p ≤.002.
Best mean is underlined.

TABLE 14

Hotelling T^2 Tests on Teacher Group Means for Combined Sexes in Second Grade

Difference Among Teacher Group Means Using Motor Performance Variables:

Hotelling T^2=78.07 F=9.67 p<.001 df=8,808 *

Difference Among Teacher Group Means Using All Variables:

Hotelling T^2=108.56 F=9.72 p<.001 df=11,725 *

Difference on Single Motor Performance Variables:

Sex	Mean	SD	Score Range High	Score Range Low	N	t Value/ p Value
Jump and Reach (in):						
Specialist	7.89	2.03	15	0	465	-1.50
Classroom	8.10	1.98	13	2.5	376	p=.133
Sit-Ups:						
Specialist	24.21	8.17	50	0	464	-0.76
Classroom	24.63	7.69	45	0	374	p=.445
Flexed Arm Hang (sec):						
Specialist	17.45	12.97	90	0	463	0.84
Classroom	16.69	12.79	76	0	375	p=.401
Soccer Wall Volley:						
Specialist	20.86	4.92	37	6	464	-1.28
Classroom	21.30	5.05	38	7	376	p=.200
Sit and Reach(cm):						
Specialist	26.69	5.63	41	10	465	2.98
Classroom	25.51	5.80	43	6	375	p=.003*
Shape-o-Ball(sec):						
Specialist	200.11	65.61	88	696	464	-4.33
Classroom	221.27	74.06	97	607	376	p<.001*
Zig Zag Run(sec):						
Specialist	29.75	3.37	23	54	463	-6.46
Classroom	31.59	4.35	20	51	332	p<.001*
600 Yard Walk-Run (sec)						
Specialist	198.72	34.29	140	448	459	-0.98
Classroom	201.16	35.39	143	408	343	p=.527

Difference on Other Single Variables:

Self Concept (80 is maximum score):						
Specialist	57.35	11.79	79	12	484	1.36
Classroom	56.22	11.77	79	17	354	p=.174
Reading (25 is maximum score in second grade; 20 in fourth and sixth grades):						
Specialist	18.95	5.95	25	1	402	-2.82
Classroom	20.18	4.88	25	1	233	p=.005*
Mathematics (20 is maximum score):						
Specialist	15.13	4.47	20	1	402	-3.70
Classroom	16.35	3.66	20	2	233	p<.001*

* Significant at p ≤.005.
Best mean is underlined.

TABLE 15

Hotelling T^2 Tests on Teacher Group Means for Boys in Second Grade

Difference Among Teacher Group Means Using Motor Performance Variables:

Hotelling T^2=25.27 F=3.10 p=.002 df=8,413 *

Difference Among Teacher Group Means Using All Variables:

Hotelling T^2=33.11 F=2.93 p=.001 df=11,370 *

Difference on Single Motor Performance Variables:

Teacher	Mean	SD	Score Range High	Score Range Low	N	t Value/ p Value
Jump and Reach(in):						
Specialist	8.31	2.13	15	0	232	0.08
Classroom	8.29	2.07	13	2.5	203	p=.939
Sit-Ups:						
Specialist	24.68	8.60	50	0	232	-0.26
Classroom	24.89	7.81	45	0	202	p=.792
Flexed Arm Hang(sec):						
Specialist	19.14	13.53	90	0	232	1.01
Classroom	17.83	13.29	76	0	203	p=.312
Soccer Wall Volley:						
Specialist	22.48	4.97	37	8	231	0.22
Classroom	22.37	4.93	34	7	203	p=.824
Sit and Reach(cm):						
Specialist	25.54	5.83	37	10	232	1.36
Classroom	24.78	5.81	43	6	203	p=.175
Shape-o-Ball(sec):						
Specialist	199.22	67.38	88	696	232	-2.94
Classroom	219.16	74.24	110	607	203	p=.004*
Zig Zag Run(sec)						
Specialist	29.08	3.35	23	54	231	-4.31
Classroom	30.67	4.23	23	51	177	p<.001*
600 Yard Walk-Run(sec):						
Specialist	192.16	38.00	140	448	230	-0.44
Classroom	193.80	37.12	143	408	186	p=.660
Difference on Other Single Variables:						
Self Concept (80 is maximum score):						
Specialist	56.60	12.08	77	18	242	0.51
Classroom	56.02	11.51	77	22	189	p=.612
Reading (25 is maximum score in second grade; 20 in fourth and sixth grade)						
Specialist	18.22	6.07	25	1	201	-1.76
Classroom	19.30	4.98	25	1	128	p=.080
Mathematics (20 is maximum score):						
Specialist	15.52	4.35	20	1	201	-1.10
Classroom	16.02	3.71	20	2	128	p=.273

*Significant at p ≤.004.
Best mean is underlined.

TABLE 16

Hotelling T^2 Tests on Teacher Group Means for Girls in Second Grade

Difference Among Teacher Group Means Using Motor Performance Variables:

Hotelling T^2=69.36 F=8.51 p<.001 df=8,386 *

Difference Among Teacher Group Means Using All Variables:

Hotelling T^2=101.54 F=8.96 p<.001 df=11,343 *

Difference on Single Motor Performance Variables

Teacher	Mean	SD	Score Range High	Score Range Low	N	t Value/ p value
Jump and Reach(in):						
Specialist	7.48	1.84	14.0	2	233	-2.15
Classroom	7.88	1.86	12.5	3	173	p=.032*
Sit-Ups:						
Specialist	23.74	7.70	50	2	232	-0.77
Classroom	24.33	7.56	43	0	172	p=.443
Flexed Arm Hang(sec):						
Specialist	15.75	12.18	84	0	231	0.33
Classroom	15.35	12.09	65	0	172	p=.744
Soccer Wall Volley:						
Specialist	19.25	4.32	32	6	233	-1.72
Classroom	20.04	4.90	38	9	173	p=.085
Sit and Reach(cm)						
Specialist	27.84	5.18	41	10	233	2.70
Classroom	26.38	5.68	40	7	172	p=.007*
Shape-o-Ball(sec):						
Specialist	200.99	63.92	107	487	232	-3.24
Classroom	223.75	73.98	97	513	173	p=.001*
Zig Zag Run(sec):						
Specialist	30.42	3.26	25	47	232	-5.52
Classroom	32.65	4.25	20	49	155	p<.001*
600 Yard Walk-Run(sec):						
Specialist	205.30	28.71	147	294	229	-1.48
Classroom	209.88	31.16	154	311	157	p=.138
Difference on Other Single Variables:						
Self Concept (80 is maximum score):						
Specialist	58.09	11.47	79	12	242	1.38
Classroom	56.47	12.09	79	17	165	p=.170
Reading (25 is maximum score; 20 in fourth and sixth grades):						
Specialist	19.68	5.74	25	1	201	-2.61
Classroom	21.25	4.56	25	6	105	p=.010*
Mathematics (20 is maximum score):						
Specialist	14.75	4.56	20	1	201	-4.22
Classroom	16.75	3.59	20	3	105	p<.001*

*Significant at p <.04.
Best mean is underlined.

TABLE 17

Hotelling T^2 Tests on Teacher Group Means for Combined Sexes in Fourth Grades

Difference Among Teacher Group Means Using Motor Performance Variables:

Hotelling T^2=44.64 F=5.53 p<.001 df=8,816 *

Difference Among Teacher Group Means Using All Variables:

Hotelling T^2=70.80 F=6.36 p<.001 df=11,790 *

Difference on Single Motor Performance Variables

Teacher	Mean	SD	Score Range High	Score Range Low	N	t Value p Value
Jump and Reach(in):						
Specialist	9.55	2.33	16	2.0	467	-1.75
Classroom	9.87	2.74	19	3.5	358	p=.081
Sit-Ups:						
Specialist	26.85	8.74	52	0	467	-0.59
Classroom	27.19	7.90	51	0	359	p=.555
Flexed Arm Hang(sec):						
Specialist	20.75	15.55	90	0	466	2.00
Classroom	18.54	15.86	90	0	360	p=.045*
Soccer Wall Volley:						
Specialist	27.72	6.50	50	12	467	3.56
Classroom	26.22	5.57	44	13	362	p<.001*
Sit and Reach(cm):						
Specialist	27.38	5.71	44	5	467	3.57
Classroom	25.83	6.57	43	3	362	p<.001*
Shape-o-Ball(sec):						
Specialist	154.68	55.98	76	696	466	-2.65
Classroom	164.19	46.95	83	409	361	p=.008*
Zig Zag Run(sec):						
Specialist	27.43	2.65	21	38	467	-2.69
Classroom	27.95	2.91	22	41	362	p=.007*
600 Yard Walk-Run(sec):						
Specialist	184.69	31.82	124	345	462	-2.68
Classroom	191.37	40.26	127	416	401	p=.008*
Difference on Other Single Variables:						
Self-Concept (80 is maximum score):						
Specialist	56.14	12.76	79	15	554	1.44
Classroom	54.96	12.12	80	11	407	p=.149
Reading (20 is maximum score):						
Specialist	14.71	4.93	20	0	446	-3.29
Classroom	15.76	4.31	20	0	388	p=.001*
Mathematics (20 is maximum score):						
Specialist	14.29	5.01	20	0	446	-1.58
Classroom	14.83	4.81	20	1	388	p=.115

*Significant at p <.05.
Best mean is underlined.

TABLE 18

Hotelling T^2 Tests on Teacher Group Means for Boys in Fourth Grade

Difference Among Teacher Group Means Using Motor Performance Variables:

Hotelling T^2=31.45 F=3.86 p<.001 df=8,425 *

Difference Among Teacher Group Means Using All Variables:

Hotelling T^2=44.47 F=3.94 p<.001 df=11,408 *

Difference on Single Motor Performance Variables:

Teacher	Mean	SD	Score Range High	Low	N	t Value p Value
Jump and Reach (in):						
Specialist	10.34	2.31	16	2	234	-0.78
Classroom	10.54	2.91	19	5	199	p=.436
Sit-Ups:						
Specialist	28.30	9.30	52	2	234	-0.20
Classroom	28.47	7.92	51	0	201	p=.842
Flexed Arm Hang(sec):						
Specialist	24.24	16.38	90	0	234	1.40
Classroom	22.03	16.37	90	0	201	p=.162
Soccer Wall Volley:						
Specialist	29.61	6.57	50	12	234	3.67
Classroom	27.51	5.36	44	14	203	p<.001*
Sit and Reach(cm):						
Specialist	26.40	5.58	41	8	234	3.18
Classroom	24.64	5.99	43	10	202	p=.002*
Shape-o-Ball(sec):						
Specialist	153.25	45.98	78	380	233	-2.55
Classroom	164.63	46.75	83	409	202	p<.011*
Zig Zag Run(sec):						
Specialist	26.73	2.46	21	37	234	-1.34
Classroom	27.05	2.47	22	41	203	p=.183
600 Yard Walk-Run(sec)						
Specialist	174.00	29.20	124	278	231	-2.57
Classroom	181.92	36.06	127	293	233	p=.011*
Difference on Other Single Variables:						
Self Concept (80 is maximum score):						
Specialist	56.05	12.72	79	15	280	0.99
Classroom	54.97	11.59	79	17	221	p=.325
Reading (20 is maximum score):						
Specialist	14.13	5.36	20	0	223	-2.07
Classroom	15.12	4.64	20	0	210	p=.039*
Mathematics (20 is maximum score):						
Specialist	14.23	5.26	20	0	223	-0.69
Classroom	14.57	4.94	20	1	210	p=.492

*Significant at p <.04.
Best mean is underlined.

TABLE 19

Hotelling T^2 Tests on Teacher Group Means for Girls in Fourth Grade

Differences Among Teacher Group Means Using Motor Performance Variables:

Hotelling T^2=22.82 F=2.80 p=.005 df=8,381

Difference Among Teacher Group Means Using All Variables:

Hotelling T^2=43.11 F=3.81 p<.001 df=11,368

Difference on Single Motor Performance Variables:

Teacher	Mean	SD	Score Range High	Score Range low	N	t Value/ p Value
Jump and Reach(in):						
Specialist	8.77	2.08	16	4.0	232	-1.16
Classroom	9.03	2.24	16	3.5	159	p=.239
Sit-Ups:						
Specialist	25.39	7.90	46	0	232	-0.23
Classroom	25.58	7.59	41	5	158	p=.814
Flexed Arm Hang(sec):						
Specialist	17.28	13.82	90	0	231	2.20
Classroom	14.12	14.05	81	0	159	p=.028*
Soccer Wall Volley						
Specialist	25.84	5.86	46	13	232	2.18
Classroom	24.57	5.41	42	13	159	p=.030*
Sit and Reach(cm):						
Specialist	28.41	5.65	44	5	232	1.61
Classroom	27.34	6.97	43	3	160	p=.108
Shape-o-Ball(sec):						
Specialist	155.86	64.55	76	696	232	-1.37
Classroom	163.64	47.33	96	403	159	p=.170
Zig Zag Run(sec):						
Specialist	28.12	2.62	23	38	232	-3.39
Classroom	29.12	3.03	24	39	159	p=.001*
600 Yard Walk Run(sec):						
Specialist	195.36	30.84	140	345	230	-2.09
Classroom	203.20	42.18	137	416	178	p<.038*
Difference on Other Single Variables:						
Self Concept (80 is maximum score):						
Specialist	56.28	12.83	79	20	273	1.09
Classroom	54.96	12.75	80	11	186	p=.278
Reading (20 is maximum score):						
Specialist	15.29	4.40	20	2	222	-2.98
Classroom	16.51	3.77	20	4	178	p=.003*
Mathematics (20 is maximum score):						
Specialist	14.37	4.75	20	1	222	-1.62
Classroom	15.14	4.66	20	2	178	p=.107

*Significant at p<.04.
Best mean is underlined.

TABLE 20

Hotelling T^2 Tests on Teacher Group Means for Combined Sexes in Sixth Grade

Difference Among Teacher Group Means Using Motor Performance Variable:

Hotelling T^2=71.03 F=8.78 p<.001 df=8,633 *

Difference Among Teacher Group Means Using All Variables:

Hotelling T^2=65.42 F=5.84 p<.001 df=11,570 *

Difference on Single Motor Performance Variables:

Teacher	Mean	SD	Score Range High	Score Range Low	N	t Value/ p Value
Jump and Reach(in):						
Specialist	12.34	4.33	31	5	373	1.72
Classroom	11.85	2.82	22	4	273	p=.086
Sit-Ups:						
Specialist	32.32	8.84	57	9	375	4.32
Classroom	29.14	9.88	57	0	277	p<.001*
Fixed Arm Hang(sec):						
Specialist	23.19	18.65	90	0	373	3.20
Classroom	18.78	16.37	77	0	275	p=.002*
Soccer Wall Volley:						
Specialist	31.65	6.50	52	15	371	1.98
Classroom	30.59	6.98	57	17	275	p=.048*
Sit and Reach(cm):						
Specialist	27.64	7.20	45	7	373	1.81
Classroom	26.64	6.66	42	9	274	p=.070
Shape-o-Ball(sec):						
Specialist	127.05	40.95	62	497	375	-2.16
Classroom	134.29	43.77	67	322	275	p=.031*
Zig Zag Run(sec):						
Specialist	25.41	2.11	21	35	375	-7.79
Classroom	26.88	2.55	22	37	275	p<.001*
600 Yard Walk-Run(sec):						
Specialist	168.96	31.55	116	319	358	-4.13
Classroom	181.10	42.38	111	373	307	p<.001*
Difference on Other Single Variables:						
Self-Concept (80 is maximum score):						
Specialist	56.89	11.78	79	21	373	1.33
Classroom	55.68	12.15	79	23	319	p=.185
Reading(20 is maximum score):						
Specialist	15.52	5.03	20	0	312	0.26
Classroom	15.40	4.61	20	1	183	p=.791
Mathematics (20 is maximum score):						
Specialist	10.78	5.99	20	0	312	1.58
Classroom	9.93	5.35	20	0	183	p=.115

*Significant at p <.05.
Best mean is underlined.

TABLE 21

Hotelling T^2 Tests on Teacher Group Means for Boys in Sixth Grade

Difference Among Teacher Group Means Using Motor Performance Variables:

Hotelling T^2=43.20 F=5.28 p<.001 df=8,309 *

Difference Among Teacher Group Means Using All Variables

Hotelling T^2=39.36 F=3.45 p<.001 df=11,278 *

Difference on Single Motor Performance Variables

Teacher	Mean	SD	Score Range High	Score Range Low	N	t Value/ p Value
Jump and Reach(in):						
Specialist	13.11	4.22	31	6.0	184	1.30
Classroom	12.59	2.99	22	5.5	137	p=.195
Sit-Up:						
Specialist	33.05	9.22	55	12	184	0.27
Classroom	32.77	9.96	57	3	138	p=.790
Flexed Arm Hang(sec):						
Specialist	28.10	20.99	90	0	184	1.92
Classroom	23.77	14.47	77	0	137	p=.055
Soccer Wall Volley:						
Specialist	34.16	6.51	52	15	182	2.11
Classroom	32.52	7.40	57	18	137	p=.036*
Sit and Reach(cm):						
Specialist	25.30	7.17	44	7	184	-0.46
Classroom	25.67	6.68	42	10	136	p=.643
Shape-o-Ball(sec):						
Specialist	128.95	43.33	62	497	184	-1.21
Classroom	135.12	47.12	67	309	137	p=.225
Zig Zag Run(sec):						
Specialist	24.56	1.75	21	30	184	-5.69
Classroom	25.94	2.40	22	33	137	p<.001*
600 Yard Walk Run(sec):						
Specialist	158.76	32.18	116	319	175	-2.03
Classroom	166.79	39.21	111	329	157	p=.044*
Difference on Other Single Variables:						
Self Concept(80 is maximum score):						
Specialist	57.40	11.49	79	21	179	0.66
Classroom	56.56	12.04	79	23	161	p=.512
Reading(20 is maximum score):						
Specialist	14.84	5.33	20	0	153	0.17
Classroom	14.73	5.08	20	1	95	p=.865
Mathematics(20 is maximum score):						
Specialist	10.14	5.95	20	0	153	0.00
Classroom	10.14	5.28	20	1	95	p=1.000

*Significant at p <.05.
Best mean is underlined.

TABLE 22

Hotelling T^2 Tests on Teacher Group Means for Girls in Sixth Grade

Difference Among Teacher Group Means Using Motor Performance Variables:

Hotelling T^2=73.34 F=8.96 p<.001 df=8,315 *

Difference Among Teacher Group Means Using All Variables:

Hotelling T^2=74.03 F=6.49 p<.001 df=11,280*

Difference on Single Motor Performance Variables:

Teacher	Mean	SD	Score Range High	Score Range Low	N	t Value/ p Value
Jump and Reach(in):						
Specialist	11.57	4.31	31.0	5	189	1.26
Classroom	11.10	2.42	18.5	4	136	p=.210
Sit-Ups:						
Specialist	31.61	8.43	57	9	191	6.49
Classroom	25.53	8.40	45	0	139	p<.001*
Flexed Arm Hang(sec)						
Specialist	18.42	14.59	90	0	189	3.10
Classroom	13.83	12.15	62	0	138	p=.002*
Soccer Wall Volley:						
Specialist	29.23	5.51	41	16	189	0.86
Classroom	28.68	5.97	48	17	138	p=.389
Sit and Reach(cm):						
Specialist	29.93	6.48	45	11	189	3.20
Classroom	27.59	6.52	41	9	138	p=.002*
Shape-o-Ball(sec):						
Specialist	125.22	38.55	65	288	191	-1.88
Classroom	133.48	40.34	67	322	138	p=.061
Zig Zag Run(sec):						
Specialist	26.23	2.11	22	35	191	-6.41
Classroom	27.81	2.35	22	37	138	p<.001*
600 Yard Walk-Run(sec)						
Specialist	178.71	27.71	121	298	183	-4.47
Classroom	196.09	40.46	115	373	150	p<.001*
Difference on Other Single Variables:						
Self Concept(80 is maximum score):						
Specialist	56.41	12.04	78	21	194	1.26
Classroom	54.78	12.23	78	25	158	p=.208
Reading(20 is maximum score):						
Specialist	16.17	4.64	20	0	159	0.08
Classroom	16.12	3.94	20	3	88	p=.939
Mathematics(20 is maximum score):						
Specialist	11.39	6.00	20	0	159	2.18
Classroom	9.70	5.54	20	0	88	p=.030*

*Significant at p ≤.03.
Best mean is underlined.

TABLE 23

Hotelling T^2 Test on Handedness Group Means for Combined Sexes in Second Grade

Difference Among Handedness Groups Using All Variables:

Hotelling T^2=15.10 F=1.35 p=.191 df=11,713

Difference on Single Variables:

Hand	Mean	SD	Score Range High	Score Range Low	N	t Value p Value
Jump and Reach(in):						
Right	8.02	2.03	15	0	743	0.92
Left	7.79	1.95	12	3	70	p=.356
Sit-Ups:						
Right	24.32	8.01	50	0	740	-1.40
Left	25.71	7.31	43	0	70	p=.162
Flexed Arm Hang(sec):						
Right	17.29	12.98	90	0	740	0.81
Left	15.98	13.29	88	0	70	p=.420
Soccer Wall Volley:						
Right	21.05	4.94	37	6	742	1.83
Left	19.93	4.62	33	10	70	p=.067
Sit and Reach(cm)						
Right	26.15	5.73	43	6	742	-0.50
Left	26.51	6.14	40	10	70	p=.616
Shape-o-Ball(sec):						
Right	208.16	71.41	88	696	742	-1.19
Left	216.79	56.74	125	377	70	p=.239
Zig Zag Run(sec):						
Right	30.46	3.89	20	54	702	-1.37
Left	31.16	4.38	25	46	65	p=.170
600 Yard Walk-Run(sec):						
Right	200.50	33.48	140	448	697	0.20
Left	199.31	45.97	144	408	64	p=.841
Self Concept(80 is maximum score):						
Right	56.85	11.87	79	12	744	0.98
Left	55.37	11.37	74	17	67	p=.330
Reading(25 is maximum score in second grade, 20 in fourth and sixth):						
Right	19.31	5.70	25	1	585	-1.65
Left	20.40	4.35	25	6	50	p=.104
Mathematics(20 is maximum score):						
Right	15.54	4.21	20	1	585	-0.84
Left	16.08	4.43	20	1	50	p=.384

Best mean is underlined.

TABLE 24

Hotelling T^2 Test on Handedness Group Means
for Boys in Second Grade

Difference Among Handedness Groups Using All Variables:

Hotelling T^2=12.16 F=1.07 p=.381 df=11,364

Difference on Single Variables:

Hand	Mean	SD	Score Range High	Low	N	t Value/ p Value
Jump and Reach(in):						
Right	8.34	2.12	15	0	386	0.94
Left	8.00	2.05	12	3	36	p=.350
Sit-Ups:						
Right	24.87	8.27	50	0	385	-0.05
Left	24.94	7.60	39	0	36	p=.961
Flexed Arm Hang(sec):						
Right	18.59	13.21	90	0	386	-0.13
Left	18.88	16.46	88	0	36	p=.901
Soccer Wall Volley:						
Right	22.47	4.91	37	7	385	1.20
Left	21.44	5.06	33	12	36	p=.232
Sit and Reach(cm):						
Right	25.09	5.78	43	6	386	-1.53
Left	26.64	6.41	37	10	36	p=.361
Shape-o-Ball(sec):						
Right	207.14	72.84	88	696	386	-1.05
Left	218.25	59.49	125	377	36	p=.128
Zig Zag Run(sec):						
Right	29.73	3.86	23	54	362	-0.89
Left	29.94	3.95	25	42	33	p=.767
600 Yard Walk-Run(sec):						
Right	194.58	36.24	140	448	361	0.97
Left	185.41	52.40	144	408	32	p=.339
Self Concept(80 is maximum score):						
Right	56.28	11.95	77	18	384	0.37
Left	55.51	10.79	74	27	35	p=.714
Reading(25 is maximum score):						
Right	18.56	5.83	25	1	303	-1.36
Left	19.65	3.73	25	13	26	p=.181
Mathematics (20 is maximum score):						
Right	15.64	4.14	20	1	303	-1.06
Left	16.54	3.83	20	5	26	p=.288

*Best mean is underlined.

TABLE 25

Hotelling T^2 Test on Handedness Group Means
for Girls in Second Grade

Difference Among Handedness Groups Using All Variables:

Hotelling T^2=15.88 F=1.39 p=.172 df=11,336

Difference on Single Variables:

Hand	Mean	SD	Score Range High	Low	N	t Value/ p Value
Jump and Reach(in):						
Right	7.67	1.87	14.0	2	357	0.32
Left	7.55	1.84	10.5	4	34	p=.745
Sit-Ups:						
Right	23.73	7.69	50	0	355	-2.05
Left	26.53	6.70	43	11	34	p=.041*
Flexed Arm Hang(sec)						
Right	15.88	12.60	84	0	354	1.96
Left	12.91	7.93	37	0	34	p=.055
Soccer Wall Volley:						
Right	19.53	4.50	35	6	357	1.52
Left	18.22	3.50	27	10	34	p=.130
Sit and Reach(cm):						
Right	27.31	5.44	41	7	356	0.88
Left	26.38	5.93	40	11	34	p=.346
Shape-o-Ball(sec):						
Right	209.27	69.91	97	513	356	-0.48
Left	215.24	54.52	149	348	34	p=.629
Zig Zag Run(sec):						
Right	31.23	3.79	20	49	340	-1.66
Left	32.41	4.51	27	46	32	p=.098
600 Yard Walk-Run(sec):						
Right	206.86	28.97	147	306	336	-1.17
Left	213.22	33.92	166	311	32	p=.244
Self-Concept(80 is maximum score):						
Right	57.45	11.77	79	12	360	1.02
Left	55.22	12.15	71	17	32	p=.306
Reading(25 is maximum score):						
Right	20.13	5.45	25	1	282	-0.94
Left	21.21	4.89	25	6	24	p=.349
Mathematics(20 is maximum score):						
Right	15.42	4.30	20	1	282	-0.17
Left	15.58	5.03	20	1	24	p=.862

*Significant at p <.05.
Best mean is underlined.

TABLE 26

Hotelling T^2 Test on Handedness Group Means
for Combined Sexes in Fourth Grade

Difference Among Handedness Groups Using All Variables:

Hotelling T^2=14.98 F=1.34 p=.196 df=11,745

Difference on Single Variables:

Hand	Mean	SD	Score Range High	Low	N	t Value/ p Value
Jump and Reach(in):						
Right	9.72	2.54	19.0	2.5	695	0.10
Left	6.96	2.53	15.5	2.0	85	p=.923
Sit-Ups:						
Right	26.82	8.48	52	0	694	-1.98
Left	28.73	7.80	43	8	86	p=.048*
Flexed Arm Hang(sec):						
Right	20.14	16.13	90	0	694	0.56
Left	19.11	14.46	72	0	86	p=.574
Soccer Wall Volley:						
Right	27.10	6.24	50	12	697	1.49
Left	26.05	5.75	42	14	86	p=.138
Sit and Reach(cm):						
Right	26.80	6.06	44	3	697	0.45
Left	26.48	6.80	43	5	86	p=.650
Shape-o-Ball(sec):						
Right	158.54	54.39	76	696	695	-0.94
Left	163.09	40.83	96	319	86	p=.351
Zig Zag Run(sec):						
Right	27.58	2.82	21	41	697	-1.62
Left	28.10	2.53	23	35	86	p=.105
600 Yard Walk-Run(sec):						
Right	188.33	36.55	124	416	731	1.26
Left	183.14	33.69	140	348	86	p=.209
Self Concept(80 is maximum score):						
Right	55.77	12.65	80	11	826	0.46
Left	55.14	12.31	79	22	93	p=.647
Reading(20 is maximum score):						
Right	15.16	4.61	20	0	706	1.63
Left	14.29	5.00	20	3	84	p=.105
Mathematics(20 is maximum score):						
Right	14.53	4.87	20	0	706	1.87
Left	13.48	5.00	20	0	84	p=.062

*Significant at $p < .05$.
Best mean is underlined.

TABLE 27

Hotelling T^2 Test on Handedness Group Means
for Boys in Fourth Grade

Difference Among Handedness Groups Using All Variables:

Hotelling T^2=16.94 F=1.50 p=0.129 df=11,386

Difference on Single Variables:

Hand	Mean	SD	Score Range High	Low	N	t Value/ p Value
Jump and Reach(in):						
Right	10.50	2.61	19.0	2.5	365	0.45
Left	10.32	2.63	15.5	2.0	46	p=.645
Sit-Ups:						
Right	28.20	8.82	52	0	365	-1.45
Left	30.17	8.35	43	8	47	p=.147
Flexed Arm Hang(sec):						
Right	23.81	16.89	90	0	365	1.20
Left	20.72	14.06	72	0	47	p=.231
Soccer Wall Volley:						
Right	28.69	6.16	50	12	367	1.84
Left	26.94	6.00	42	17	47	p=.067
Sit and Reach(cm):						
Right	25.79	5.75	43	8	366	0.82
Left	25.04	6.39	38	10	47	p=.411
Shape-o-Ball(sec):						
Right	156.86	47.22	78	409	365	-2.08
Left	172.02	45.21	104	319	47	p=.038*
Zig Zag Run(sec):						
Right	26.82	2.53	21	41	367	-1.19
Left	27.29	2.41	23	35	47	p=.235
600 Yard Walk-Run(sec):						
Right	178.39	33.09	124	284	384	0.94
Left	173.60	31.17	140	293	47	p=.346
Self-Concept(80 is maximum score						
Right	55.88	12.40	79	15	431	0.53
Left	54.90	11.87	79	22	49	p=.600
Reading(20 is maximum score):						
Right	14.70	4.89	20	0	365	1.98
Left	13.15	5.63	20	3	46	p=.048*
Mathematics(20 is maximum score):						
Right	14.44	4.97	20	0	365	1.75
Left	13.07	5.43	20	0	46	p=.080

*Significant at p <.05.
Best Mean is Underlined.

TABLE 28

Hotelling T^2 Test on Handedness Group Means
for Girls in Fourth Grade

Difference Among Handedness Groups Using All Variables:

Hotelling T^2=8.15 F=0.72 p=.721 df=11,346

Difference on Single Variables:

Hand	Mean	SD	Score Range High	Score Range Low	N	t Value/ p Value
Jump and Reach(in):						
Right	8.86	2.16	16	3.5	330	-0.27
Left	8.96	2.22	14	4.5	39	p=.790
Sit-ups:						
Right	25.31	7.83	46	0	329	-1.29
Left	27.00	6.77	38	14	39	p=.196
Flexed Arm Hang(sec):						
Right	16.06	14.20	90	0	329	-0.46
Left	17.17	14.88	64	0	39	p=.648
Soccer Wall Volley:						
Right	25.34	5.86	46	13	330	0.37
Left	24.97	5.30	37	14	39	p=.714
Sit and Reach(cm):						
Right	27.91	6.20	44	3	331	-0.27
Left	28.21	6.97	43	5	39	p=.785
Shape-o-Ball(sec):						
Right	160.41	61.38	76	696	330	1.31
Left	152.33	32.10	96	226	39	p=.193
Zig Zag Run(sec):						
Right	28.43	2.88	23	39	330	-1.36
Left	29.08	2.33	24	35	39	p=.175
600 Yard Walk-Run(sec):						
Right	199.34	37.09	137	416	347	0.76
Left	194.64	33.38	157	348	39	p=.450
Self Concept(80 is maximum score):						
Right	55.66	12.93	80	11	395	0.12
Left	55.40	12.91	78	24	44	p=.902
Reading(20 is maximum score):						
Right	15.65	4.24	20	2	341	-0.01
Left	15.66	3.74	20	7	38	p=.992
Mathematics(20 is maximum score):						
Right	14.62	4.76	20	1	341	0.80
Left	13.97	4.43	20	6	38	p=.423

Best mean is underlined.

TABLE 29

Hotelling T^2 Test on Handedness Group Means
for Combined Sexes in Sixth Grade

Difference Among Handedness Groups Using All Variables:

Hotelling T^2=13.02 F=1.16 p=.313 df=11,521

Difference on Single Variables:

Hand	Mean	SD	Score Range High	Score Range Low	N	t Value/ p Value
Jump and Reach(in):						
Right	12.18	3.90	31	4	522	-0.25
Left	12.31	3.71	31	6	57	p=.802
Sit-Ups:						
Right	31.18	9.27	57	4	527	1.75
Left	28.43	11.60	47	0	58	p=.086
Flexed Arm Hang(sec):						
Right	21.25	18.10	90	0	525	1.22
Left	18.19	16.99	90	0	57	p=.223
Soccer Wall Volley:						
Right	30.82	6.46	53	16	522	0.60
Left	30.28	6.23	48	18	57	p=.550
Sit and Reach(cm):						
Right	26.94	7.19	45	7	523	-0.59
Left	27.53	6.02	37	12	57	p=.555
Shape-o-Ball(sec):						
Right	129.44	40.76	65	322	526	-0.81
Left	136.42	63.98	62	497	57	p=.423
Zig Zag Run(sec):						
Right	26.16	2.43	21	37	526	-0.54
Left	26.34	2.40	22	35	57	p=.590
600 Yard Walk-Run(sec):						
Right	174.44	36.16	116	373	544	-1.27
Left	182.44	45.15	118	298	55	p=.208
Self Concept(80 is maximum score):						
Right	55.88	12.09	79	21	566	-1.14
Left	57.72	10.17	75	30	60	p=.256
Reading(20 is maximum score):						
Right	15.48	4.79	20	0	420	0.92
Left	14.78	5.45	20	1	46	p=.357
Mathematics(20 is maximum score:						
Right	10.43	5.74	20	0	420	0.04
Left	10.39	6.35	20	0	46	p=.969

Best mean is underlined.

TABLE 30

Hotelling T^2 Test on Handedness Group Means
for Boys in Sixth Grade

Difference Among Handedness Groups Using All Variables:

Hotelling T^2=19.09 F=1.66 p=.082 df=11,251

Difference on Single Variables:

Hand	Mean	SD	Score Range High	Score Range Low	N	t Value/ p Value
Jump and Reach(in):						
Right	13.14	3.93	31.0	5.5	253	2.25
Left	11.88	2.90	16.5	6.0	33	p=.029
Sit-Ups:						
Right	33.56	9.25	57	4	254	2.11
Left	29.88	10.76	45	3	33	p=.036*
Flexed Arm Hang(sec):						
Right	26.85	20.40	90	0	253	1.85
Left	19.90	19.23	90	0	33	p=.065
Soccer Wall Volley:						
Right	33.11	6.76	53	18	251	0.44
Left	32.58	6.05	48	20	33	p=.664
Sit and Reach(cm):						
Right	25.05	7.08	44	7	252	-1.04
Left	26.39	6.03	35	12	33	p=.299
Shape-o-Ball(sec):						
Right	129.94	41.93	67	309	253	-0.97
Left	142.42	72.04	62	497	33	p=.337
Zig Zag Run(sec):						
Right	25.26	2.24	21	33	253	-0.03
Left	25.28	1.84	23	30	33	p=.976
600 Yard Walk-Run(sec):						
Right	160.95	33.28	116	329	267	-1.45
Left	172.48	42.86	118	270	31	p=.157
Self Concept(80 is maximum score):						
Right	56.76	11.87	79	21	272	-0.17
Left	57.12	10.84	75	30	34	p=.866
Reading(20 is maximum score):						
Right	14.87	4.98	20	0	206	0.99
Left	13.81	6.43	20	1	26	p=.324
Mathematics(20 is maximum score):						
Right	10.05	5.57	20	0	206	-0.21
Left	10.31	6.90	20	0	26	p=.831

*Significant at p < .04.
Best mean is underlined.

TABLE 31

Hotelling T^2 Test on Handedness Group Means
for Girls in Sixth Grade

Difference Among Handedness Groups Using All Variables:

Hotelling T^2=15.17 F=1.32 p=.212 df=11,257

Difference on Single Variables:

Hand	Mean	SD	Score Range High	Score Range Low	N	t Value/ p Value
Jump and Reach(in):						
Right	11.28	3.64	31	4	269	-2.06
Left	12.92	4.61	31	8	24	p=.040*
Sit-Ups:						
Right	28.97	8.74	57	7	273	0.95
Left	26.52	12.58	47	0	25	p=.349
Flexed Arm Hang(sec):						
Right	16.05	13.78	90	0	272	0.07
Left	15.85	13.38	56	0	24	p=.943
Soccer Wall Volley						
Right	28.69	5.36	45	16	271	1.38
Left	27.12	5.05	39	18	24	p=.168
Sit and Reach(cm):						
Right	28.70	6.84	45	9	271	-0.26
Left	29.08	5.76	37	13	24	p=.792
Shape-o-Ball(sec):						
Right	128.98	39.72	65	322	273	0.09
Left	128.17	51.22	75	280	24	p=.925
Zig Zag Run(sec):						
Right	26.99	2.31	23	37	273	-1.66
Left	27.81	2.35	25	35	24	p=.099
600 Yard Walk-Run(sec):						
Right	187.44	34.06	121	373	277	-1.05
Left	195.29	45.66	131	298	24	p=.294
Self Concept(80 is maximum score):						
Right	55.06	12.25	78	21	294	-139
Left	58.50	9.36	72	39	26	p=.164
Reading(20 is maximum score):						
Right	16.06	4.54	20	0	214	0.01
Left	16.05	3.61	20	9	20	p=.989
Mathematics(20 is maximum score):						
Right	10.79	5.90	20	0	214	0.21
Left	10.51	5.74	19	3	20	p=.836

*Significant at $p \leq .04$.
Best mean is underlined.

TABLE 32

READING STEPWISE REGRESSION SUMMARY TABLES
FOR SECOND GRADE *

Variables	Multiple R	R^2	Beta	F Value	Simple r	
Total Subjects						
Shape-o-Ball	0.2093	0.0438	-0.1946	19.351	-0.2093	
Sit and Reach	0.2464	0.0607	0.1334	10.940	0.1523	
600 Yard Walk Run	0.2543	0.0647	-0.0864	3.304	-0.0934	
Jump and Reach	0.2621	0.0687	-0.0752	2.902	-0.0164	UMSE
Sit-Ups	0.2659	0.0707	0.0552	1.521	0.0626	
Flexed Arm Hang	0.2669	0.0712	-0.0249	0.308	0.0236	
Soccer Wall Volley	0.2674	0.0715	-0.0178	0.156	0.0541	
Zig Zag Run	0.2675	0.0716	0.0073	0.025	-0.0967	

N = 590; F = 3.27, p <.001, F = 1.94 p <.05; r = .115 p <.01, r = .088 p <.05.

Boys Only						
Zig Zag Run	0.2035	0.0414	-0.1456	4.623	-0.2035	
Shape-o-Ball	0.2279	0.0519	-0.0954	2.221	-0.1823	
Sit and Reach	0.2433	0.0592	0.0832	2.140	0.1137	UMSE
Soccer Wall Volley	0.2488	0.0619	0.0710	1.291	0.1288	
Jump and Reach	0.2563	0.0657	-0.0572	0.839	-0.0041	
Flexed Arm Hang	0.2587	0.0670	-0.0433	0.488	0.0234	
600 Yard Walk Run	0.2609	0.0681	-0.0430	0.411	-0.1057	
Sit-Ups	0.2621	0.0687	-0.0281	0.189	0.0264	

N = 307; F = 3.27 p <.001, F = 1.94 p <.05; r = .148 p <.01, r = .113 p <.05.

Girls Only						
Shape-o-Ball	0.2475	0.0613	-0.2827	20.343	-0.2475	
600 Yard Walk Run	0.2954	0.0873	-0.1531	5.165	-0.1481	
Sit and Reach	0.3129	0.0979	0.1131	3.748	0.1545	UMSE
Sit-Ups	0.3219	0.1036	0.1116	3.254	0.1262	
Zig Zag Run	0.3328	0.1108	0.0879	1.947	-0.0468	
Jump and Reach	0.3381	0.1143	-0.0585	0.926	0.0185	
Soccer Wall Volley	0.3396	0.1153	-0.0353	0.316	0.0767	
Flexed Arm Hang	0.3398	0.1155	-0.0133	0.042	0.0631	

N = 283; F = 3.27 p <.001, F = 1.94 p <.05; r = .1536 p <.01, r = .117 p <.05.

*SPSS Stepwise Multiple Regression for forward selection procedures.

TABLE 33

READING STEPWISE REGRESSION SUMMARY TABLES
FOR FOURTH GRADE*

ariables	Multiple R	R^2	Beta	F Value	Simple r	
			Total Subjects			
hape-o-Ball	0.2819	0.0795	-0.2584	47.547	-0.2819	
it and Reach	0.3069	0.0942	0.1158	9.983	0.1593	
ump and Reach	0.3126	0.0977	-0.0497	1.529	-0.0506	UMSE
occer Wall Volley	0.3149	0.0992	-0.0558	2.051	0.0047	
ig Zag Run	0.3183	0.1013	-0.0575	2.035	-0.1125	
it-Ups	0.3211	0.1031	-0.0449	1.527	-0.0436	
lexed Arm Hang	0.3225	0.1040	0.0374	0.819	0.0499	
00 Yard Walk Run	0.3227	0.1041	0.0111	0.067	0.0050	
N=713; F=3.27 p <.001, F=1.94 p <.05; r=.098 p <.01, r=.085 p <.05.						
			Boys Only			
Shape-o-Ball	0.2898	0.0840	-0.2621	25.851	-0.2898	
Zig Zag Run	0.3055	0.0933	-0.0919	2.875	-0.1501	UMSE
Sit and Reach	0.3129	0.0979	0.0681	1.728	0.1238	
Sit-Ups	0.3140	0.0986	-0.0330	0.352	-0.0088	
Flexed Arm Hang	0.3143	0.0988	0.0148	0.074	0.0593	
Jump and Reach	0.3144	0.0989	0.0096	0.031	0.0174	
Soccer Wall Volley	0.3145	0.0989	-0.0090	0.030	0.0666	
N=373; F=3.74 p <.001, F=2.09 p <.05; r=.133 p <.01, r=.102 p <.05.						
			Girls Only			
Shape-o-Ball	0.2958	0.0875	-0.2663	23.526	-0.2958	
Sit and Reach	0.3176	0.1009	0.1186	4.690	0.1590	
Jump and Reach	0.3353	0.1124	-0.0916	2.752	-0.0717	UMSE
Flexed Arm Hang	0.3407	0.1160	0.0837	2.094	0.1068	
Soccer Wall Volley	0.3470	0.1204	-0.0908	2.631	-0.0092	
Sit-Ups	0.3535	0.1249	-0.0800	2.054	-0.0450	
Zig Zag Run	0.3587	0.1287	-0.0684	1.393	-0.1606	
600 Yard Walk Run	0.3587	0.1287	-0.0059	0.011	-0.0234	
N=340; F=3.27 p <.001, F=1.94 p <.05; r=.140 p <.01, r=.107 p <.05.						

*SPSS Stepwise Multiple Regression for forward selection procedure.

TABLE 34

READING STEPWISE REGRESSION SUMMARY TABLES
FOR SIXTH GRADE *

Variables	Multiple R	R^2	Beta	F Value	Simple r
Total Subjects					
Shape-o-Ball	0.2572	0.0661	-0.2504	29.889	-0.2572
Sit and Reach	0.2849	0.0812	0.1181	6.879	0.1395
600 Yard Walk Run	0.2969	0.0882	0.0926	2.934	0.0928
Flexed Arm Hang	0.3051	0.0931	0.1008	3.687	0.0304
Soccer Wall Volley	0.3125	0.0976	-0.0628	1.623	-0.0559
Jump and Reach	0.3143	0.0988	-0.0362	0.524	-0.0859
Zig Zag Run	0.3147	0.0990	0.0181	0.121	-0.0069
N=464; F=3.74 p. <.001, F=2.09 p <.05; r=.1215 p <.01, r=.0916 p <.05.					
Boys Only					
Shape-o-Ball	0.2352	0.0553	-0.2451	13.925	-0.2352
Sit and Reach	0.2683	0.0720	0.1361	4.330	0.1254
Soccer Wall Volley	0.2823	0.0797	-0.0859	1.553	-0.0540
Sit-Ups	0.2871	0.0824	-0.0464	0.352	-0.0455
Flexed Arm Hang	0.2957	0.0875	0.0994	1.736	0.0562
600 Yard Walk Run	0.2988	0.0893	0.0471	0.320	0.0484
Zig Zag Run	0.2994	0.0896	0.0224	0.092	-0.0180
Jump and Reach	0.2997	0.0898	-0.0166	0.048	-0.0547
N=234; F=3.27 p <.001, F=1.94 p <.05; r=.1701 p <.01, r=.1295 p <.05.					
Girls Only					
Shape-o-Ball	0.2714	0.0737	-0.2580	14.846	-0.2714
Flexed Arm Hang	0.2848	0.0811	0.1103	2.315	0.0854
600 Yard Walk Run	0.2977	0.0887	0.1087	2.260	0.0543
Sit-Ups	0.3006	0.0903	0.0513	0.451	0.0435
Jump and Reach	0.3050	0.0930	-0.0555	0.648	-0.0459
Sit and Reach	0.3064	0.0939	0.0252	0.137	0.0775
Soccer Wall Volley	0.3070	0.0942	0.0181	0.069	0.0548
Zig Zag Run	0.3072	0.0944	-0.0133	0.031	-0.0972
N=230; F=3.27 p <.001, F=1.94 p <.05; r=.1711 p= <.01, r=.1305 p <.05.					

*SPSS Stepwise Multiple Regression for forward selection procedure.

TABLE 35

MATHEMATICS STEPWISE REGRESSION SUMMARY TABLES FOR SECOND GRADE*

Variables	Multiple R	R^2	Beta	F Value	Simple r	
Total Subjects						
Shape-o-Ball	0.2673	0.0714	-0.2304	28.745	-0.2673	
Soccer Wall Volley	0.3113	0.0969	0.1642	14.093	0.2192	
Sit and Reach	0.3283	0.1078	0.1084	7.660	0.1416	
Sit-Ups	0.3360	0.1129	-0.0763	3.079	-0.0112	
600 Yard Walk Run	0.3468	0.1203	-0.1066	5.342	-0.1502	UMSE
Jump and Reach	0.3500	0.1225	-0.0527	1.512	0.0213	
Zig Zag Run	0.3525	0.1242	0.0486	1.161	-0.1054	
Flexed Arm Hang	0.3526	0.1243	0.0106	0.060	0.1719	
N=590; F=3.27 p<.001, F=1.94 p <.05; r=.115 p <.01, r=.088 p <.05.						
Boys Only						
Shape-o-Ball	0.2409	0.0580	-0.1214	3.950	-0.2409	
Soccer Wall Volley	0.2958	0.0875	0.1821	9.349	0.2305	UMSE
Sit-Ups	0.3412	0.1164	-0.2151	12.274	-0.0980	
Zig Zag Run	0.3732	0.1393	-0.1500	5.395	-0.2227	
Sit and Reach	0.3822	0.1461	0.0906	2.791	0.1378	
600 Yard Walk Run	0.3883	0.1508	-0.0833	1.700	-0.1549	
Jump and Reach	0.3913	0.1531	-0.0546	0.840	-0.0149	
Flexed Arm Hang	0.3916	0.1533	0.0170	0.083	0.0776	
N=307; F=3.27 p <.001, F=1.94 p <.05; r=.148 p <.01, r=.113 p <.05.						
Girls Only						
Shape-o-Ball	0.2996	0.0898	-0.3385	31.222	-0.2996	
600 Yard Walk Run	0.3404	0.1158	-0.1256	3.721	-0.1455	
Zig Zag Run	0.3763	0.1416	0.2101	11.917	0.0226	
Soccer Wall Volley	0.4018	0.1615	0.1399	5.311	0.2203	
Sit and Reach	0.4131	0.1706	0.0991	3.077	0.1566	UMSE
Sit-Ups	0.4158	0.1729	0.0563	0.887	0.0879	
Jump and Reach	0.4165	0.1735	-0.0255	0.187	0.0580	
Flexed Arm Hang	0.4166	0.1736	-0.0114	0.033	0.0617	
N=283; F=3.27 p <.001, F=1.94 p <.05; r=.1536, p <.01, r=.117 p <.05.						

*SPSS Stepwise Multiple Regression for forward selection procedure.

TABLE 36

MATHEMATICS STEPWISE REGRESSION SUMMARY TABLES FOR FOURTH GRADE*

Variables	Multiple R	R^2	Beta	F Value	Simple r	
Total Subjects						
Shape-o-Ball	0.3147	0.0990	-0.2622	50.358	-0.3147	
Zig Zag Run	0.3433	0.1178	-0.1392	12.271	-0.2158	
Sit and Reach	0.3521	0.1240	0.0725	4.023	0.1387	UMSE
Jump and Reach	0.3542	0.1255	-0.0379	0.915	0.0008	
Flexed Arm Hang	0.3569	0.1274	0.0599	2.158	0.1065	
Sit-Ups	0.3587	0.1287	-0.0338	0.721	0.0005	
600 Yard Walk Run	0.3593	0.1291	0.0263	0.393	-0.0398	
Soccer Wall Volley	0.3595	0.1293	0.0137	0.127	0.0998	
N=713; F=3.27 p <.001, F=1.94 p <.05; r=.098 p <.01, r=.085 p <.05.						
Boys Only						
Shape-o-Ball	0.2787	0.0777	-0.2397	21.745	-0.2787	
Zig Zag Run	0.3139	0.0986	-0.1337	6.082	-0.1949	UMSE
Flexed Arm Hang	0.3192	0.1019	0.0658	1.347	0.1070	
Sit and Reach	0.3227	0.1042	0.0483	0.875	0.1191	
600 Yard Walk Run	0.3252	0.1058	0.0476	0.651	-0.0377	
Soccer Wall Volley	0.3261	0.1063	0.0235	0.202	0.1027	
Jump and Reach	0.3265	0.1066	0.0242	0.193	0.0440	
Sit-Ups	0.3271	0.1070	-0.0218	0.146	0.0162	
N=373; F=3.27 p <.001, r=1.94 p <.05; r=.133 p <.01, r=.102 p <.05.						
Girls Only						
Shape-o-Ball	0.3583	0.1284	-0.2901	29.459	-0.3583	
Zig Zag Run	0.3933	0.1547	-0.1561	7.646	-0.2724	
Jump and Reach	0.4032	0.1626	-0.1009	3.521	-0.0469	
Sit and Reach	0.4109	0.1689	0.0781	2.149	0.1598	UMSE
Flexed Arm Hang	0.4141	0.1715	0.0553	0.967	0.1237	
Sit-Ups	0.4165	0.1735	-0.0455	0.700	-0.0117	
Soccer Wall Volley	0.4171	0.1739	0.0219	0.161	0.1155	
600 Yard Walk Run	0.4171	0.1740	-0.0062	0.012	-0.0594	
N=340; F=3.27 p <.001, F=1.94 p <.05; r=.140 p <.01, r=.107 p <.05.						

*SPSS Stepwise Multiple Regression for forward selection procedure.

TABLE 37

MATHEMATICS STEPWISE REGRESSION SUMMARY TABLES
FOR SIXTH GRADE*

ariables	Multiple R	R^2	Beta	F Value	Simple r	
			Total Subjects			
hape-o-Ball	0.3513	0.1234	-0.3317	55.615	-0.3513	
it and Reach	0.3738	0.1397	0.1120	6.533	0.1509	
lexed Arm Hang	0.3822	0.1461	0.1005	3.858	0.0888	UMSE
00 Yard Walk Run	0.3855	0.1486	0.0711	1.714	0.0175	
occer Wall Volley	0.3870	0.1498	0.0356	0.551	0.0722	
ump and Reach	0.3884	0.1509	-0.0483	0.932	-0.0489	
it-Ups	0.3902	0.1523	0.0403	0.583	0.0476	
ig Zag Run	0.3905	0.1525	-0.0178	0.119	-0.1147	
N=464; F=3.27 p <.001, F=1.94 p <.05; r=.1215 p <.01, r=.0916 p <.05.						
			Boys Only			
Shape-o-Ball	0.3178	0.1010	-0.3265	27.099	-0.3178	
Sit and Reach	0.3817	0.1457	0.1963	9.950	0.2063	
Flexed Arm Hang	0.3930	0.1544	0.1454	4.127	0.1340	
600 Yard Walk Run	0.4050	0.1640	0.1299	2.682	0.0297	UMSE
Sit-Ups	0.4061	0.1649	0.0381	0.261	0.0442	
Zig Zag Run	0.4074	0.1660	0.0361	0.276	-0.0834	
Jump and Reach	0.4080	0.1664	0.0248	0.119	0.0080	
N=234; F=3.74 p <.001, F=2.09 p <.05; r=.1701 p <.01, r=.1295 p <.05.						
			Girls Only			
hape-o-Ball	0.3867	0.1495	-0.3521	30.767	-0.3867	
occer Wall Volley	0.4043	0.1635	0.1068	2.668	0.1638	UMSE
ig Zag Run	0.4130	0.1706	-0.0875	1.510	-0.1993	
ump and Reach	0.4239	0.1797	-0.1214	3.442	-0.0816	
it-Ups	0.4289	0.1831	0.0636	0.770	0.0785	
lexed Arm Hang	0.4295	0.1845	0.0461	0.450	0.0726	
Sit and Reach	0.4312	0.1860	-0.0406	0.397	0.0683	
600 Yard Walk Run	0.4314	0.1861	0.0126	0.034	-0.0364	
N=230; F=327 p <.001, F=1.94 p <.05; r=.1711 p= <.01, r=.1305 p <.05.						

*SPSS Stepwise Multiple Regression for forward selection procedure.

TABLE 38

SELF CONCEPT STEPWISE REGRESSION SUMMARY TABLES FOR SECOND GRADE*

Variable	Multiple R	R^2	Beta	F Value	Simple r	
Total Groups						
600 Yard Walk-Run	0.1517	0.0230	-0.1273	8.801	-0.1517	
Jump and Reach	0.1671	0.0280	0.0575	2.127	0.1133	
Sit-Ups	0.1754	0.0308	0.0683	2.901	0.1171	
Zig Zag Run	0.1793	0.0321	0.0610	2.307	-0.0180	UMSE
Shape-o-Ball	0.1845	0.0340	-0.0411	1.151	-0.0467	
Sit and Reach	0.1878	0.0353	0.0365	1.034	0.0375	
Flexed Arm Hang	0.1899	0.0361	-0.0334	0.692	0.0546	
Soccer Wall Volley	0.1915	0.0367	0.0276	0.475	0.0905	

N=773; F=3.27 p <.001, F=1.94 p <.05; r=.098 p <.01, r=.085 p <.05.

Boys Only						
Sit-Ups	0.1746	0.0305	0.1124	3.818	0.1746	
600 Yard Walk Run	0.2059	0.0424	-0.0996	2.799	-0.1653	
Jump and Reach	0.2155	0.0464	0.0658	1.425	0.1456	UMSE
Soccer Wall Volley	0.2226	0.0496	0.0626	1.297	0.1344	
Zig Zag Run	0.2260	0.0511	0.0546	0.929	-0.0402	
Shape-o-Ball	0.2310	0.0533	-0.0537	0.982	-0.0774	
Flexed Arm Hang	0.2323	0.0540	-0.0275	0.249	0.0725	
Sit and Reach	0.2333	0.0544	-0.0217	0.189	-0.0178	

N=401; F=3.74 p <.001, F=2.09 p <.05; r=.128 p <.01, r=.098 p <.05.

Girls Only						
600 Yard Walk Run	0.1616	0.0261	-0.1593	6.773	-0.1616	
Sit and Reach	0.1753	0.0307	0.0710	1.795	0.0884	UMSE
Jump and Reach	0.1838	0.0338	0.0590	1.147	0.0944	
Flexed Arm Hang	0.1890	0.0357	-0.0507	0.743	0.0437	
Zig Zag Run	0.1906	0.0363	0.0340	0.359	-0.0101	
Soccer Wall Volley	0.1912	0.0366	0.0152	0.073	0.0715	
Shape-o-Ball	0.1917	0.0367	-0.0147	0.071	-0.0115	
Sit-Ups	0.1919	0.0368	0.0094	0.028	0.0571	

N=372; F=3.27 p <.001, F=1.94 p <.05; r=.134 p <.01, r=.102 p <.05.

*SPSS Stepwise Multiple Regression for forward selection procedure.

TABLE 39

SELF CONCEPT STEPWISE REGRESSION SUMMARY TABLES FOR FOURTH GRADE*

Variable	Multiple R	R^2	Beta	F Value	Simple r	
			Total Groups			
600 Yard Walk Run	0.1723	0.0297	-0.0994	5.757	-0.1723	
Soccer Wall Volley	0.2017	0.0407	0.0818	4.677	0.1512	
Jump and Reach	0.2158	0.0466	0.0797	4.134	0.1467	UMSE
Zig Zag Run	0.2215	0.0491	-0.0579	2.226	-0.1293	
Sit-Ups	0.2232	0.0498	-0.0347	0.808	0.0592	
Flexed Arm Hang	0.2251	0.0507	0.0342	0.723	0.1300	
Shape-o-Ball	0.2253	0.0507	0.0099	0.076	-0.0326	
			Boys Only			
Jump and Reach	0.2180	0.0475	0.1453	7.659	0.2180	
Flexed Arm Hang	0.2596	0.0674	0.0921	2.903	0.1961	
Zig Zag Run	0.2844	0.0809	-0.0930	3.299	-0.1804	
Shape-o-Ball	0.2909	0.0846	-0.0597	1.508	-0.0977	UMSE
600 Yard Walk Run	0.2947	0.0869	-0.0492	0.772	-0.1833	
Sit and Reach	0.2960	0.0876	0.0271	0.315	0.0748	
Sit-Ups	0.2967	0.0880	0.0228	0.185	0.1421	
Soccer Wall Volley	0.2971	0.0883	0.0159	0.102	0.1035	
			Girls Only			
Soccer Wall Volley	0.2417	0.0584	0.2050	14.689	0.2417	
600 Yard Walk Run	0.2848	0.0811	-0.1708	9.692	-0.2023	
Sit and Reach	0.3018	0.0911	-0.1043	3.940	-0.0488	
Shape-o-Ball	0.3081	0.0949	0.0853	2.680	0.0259	UMSE
Zig Zag Run	0.3177	0.1010	-0.0939	2.891	-0.1126	
Sit-Ups	0.3238	0.1048	-0.0728	1.869	-0.0288	
Jump and Reach	0.3266	0.1067	0.0476	0.811	0.0963	
Flexed Arm Hang	0.3272	0.1071	-0.0225	0.163	0.0716	

N=807; F=3.74 p <.001, F=2.09 p <.05; r=.095 p <.01, r=.072 p <.05.

N=426; F=3.27 p <.001, F=1.94 p <.05; r=.125 p <.01, r=.095 p <.05.

N=381; F=3.27 p <.001, F=1.94 p <.05; r=.132 p <.01, r=.101 p <.05.

*SPSS Stepwise Multiple Regression for forward selective procedure.

TABLE 40

SELF CONCEPT STEPWISE REGRESSION SUMMARY TABLES
FOR SIXTH GRADE*

Variable	Multiple R	R^2	Beta	F Value	Simple r	
			Total Groups			
Sit-Ups	0.1764	0.0311	0.1390	9.099	0.1764	
Soccer Wall Volley	0.2220	0.0493	0.1319	9.391	0.1756	UMSE
Shape-o-Ball	0.2279	0.0520	-0.0597	2.219	-0.0696	
Flexed Arm Hang	0.2333	0.0544	0.0687	2.124	0.1339	
600 Yard Walk Run	0.2361	0.0557	0.0492	0.981	-0.0908	
Sit and Reach	0.2385	0.0569	-0.0305	0.534	0.0101	
Jump and Reach	0.2388	0.0571	0.0153	0.121	0.0755	

N=614; 3.74 p <.001, F=2.09 p <.05; r=.108 p <.01, r=.083 p <.05.

			Boys Only			
Sit-Ups	0.1731	0.0300	0.1813	7.381	0.1731	
Soccer Wall Volley	0.2172	0.0472	0.1367	4.980	0.1598	
Sit and Reach	0.2437	0.0594	-0.1049	3.068	-0.0588	UMSE
Flexed Arm Hang	0.2515	0.0633	0.0839	1.599	0.1269	
600 Yard Walk Run	0.2585	0.0668	0.0909	1.583	-0.0796	
Shape-o-Ball	0.2642	0.0698	-0.0652	1.270	-0.0662	
Jump and Reach	0.2710	0.0735	0.0696	1.207	0.1275	
Zig Zag Run	0.2719	0.0739	0.0251	0.148	-0.0826	

N=303; 3.27 p<.001, F=1.94 p <.05; r=.148 p <.01, r=.113 p <.05.

			Girls Only			
Soccer Wall Volley	0.1776	0.0315	0.1286	4.401	0.1776	
Sit-Ups	0.2179	0.0475	0 0973	2,125	0.1661	UMSE
Flexed Arm Hang	0.2248	0.0505	0.0612	0.899	0.1269	
Shape-o-ball	0.2315	0.0536	-0.0404	0.465	-0.0800	
Zig Zag Run	0.2340	0.0548	-0.0384	0.334	-0.1449	
Jump and Reach	0.2353	0.0554	-0.0196	0.108	0.0082	
Sit and Reach	0.2360	0.0557	0.0208	0.111	0.1060	
600 Yard Walk Run	0.2365	0.0559	0.0183	0.079	-0.0915	

N=311; 3.27 p <.001, F=1.94 p <.05; r=.146 p <.01, r=.111 p <.05.

*SPSS Stepwise Multiple Regression for forward selection procedure.

TABLE 41

AGE STEPWISE REGRESSION SUMMARY TABLES
FOR SECOND GRADE *

ariables	Multiple R	R^2	Beta	F Value	Simple r	
			Total Group			
occer Wall Volley	0.1933	0.0374	0.2086	28.937	0.1933	
it and Reach	0.2469	0.0610	-0.1556	19.818	-0.1427	
lexed Arm Hang	0.2556	0.0654	-0.0986	6.310	0.1042	
00 Yard Walk-Run	0.2652	0.0703	0.0815	3.784	-0.0334	
ump and Reach	0.2698	0.0728	0.0565	2.180	0.0942	
ig Zag Run	0.2737	0.0749	0.0480	1.654	0.0060	UMSE
it-Ups	0.2740	0.0751	-0.0134	0.117	0.0459	

N=777; F=3.74 p <.001, F=2.09 p <.05; r=.096 p <.01, r=.074 p <.05.

			Boys Only			
occer Wall Volley	0.2140	0.0458	0.2547	22.750	0.2140	
t and Reach	0.2531	0.0640	-0.1276	6.824	-0.1155	
ig Zag Run	0.2726	0.0743	0.0896	2.618	0.0598	
lexed Arm Hang	0.2853	0.0814	0.1124	4.328	0.1184	
0 Yard Walk-Run	0.2918	0.0852	0.0653	1.293	-0.0229	UMSE
ape-o-Ball	0.2940	0.0865	0.0406	0.588	0.0225	
t-Ups	0.2944	0.0867	-0.0174	0.106	0.0353	

N=403; F=3.74 p <.001, F=2.09 p <.05; r=.128 p <.01, r=.098 p <.05.

			Girls Only			
it and Reach	0.1663	0.0277	-0.2038	15.625	-0.1663	
occer Wall Volley	0.2381	0.0567	0.1383	6.375	0.1483	
ump and Reach	0.2698	0.0728	0.1345	6.281	0.1500	
hape-o-Ball	0.2758	0.0761	-0.0563	1.095	-0.0478	UMSE
lexed Arm Hang	0.2810	0.0789	0.0786	1.882	0.0705	
00 Yard Walk-Run	0.2849	0.0811	0.0541	0.822	-0.0245	
it-Ups	0.2850	0.0812	-0.0104	0.036	0.0528	
ig Zag Run	0.2851	0.0813	-0.0076	0.019	-0.0401	

N=374; F=3.27 p <.001, F=1.94 p <.05; r=.133 p <.01, r=.102 p <.05.

*SPSS Stepwise Multiple Regression for forward selection procedure.

TABLE 42

AGE STEPWISE REGRESSION SUMMARY TABLES
FOR FOURTH GRADE *

Variable	Multiple R	R^2	Beta	F Value	Simple r	
			Total Group			
Soccer Wall Volley	0.1235	0.0153	0.1111	8.423	0.1235	
Shape-o-Ball	0.1434	0.0206	0.0769	4.442	0.0519	
Flexed Arm Hang	0.1578	0.0249	0.0727	3.165	0.0913	
Sit and Reach	0.1728	0.0299	-0.0725	4.095	-0.0602	UMS.
Jump and Reach	0.1746	0.0305	0.0295	0.550	0.0721	
Zig Zag Run	0.1758	0.0309	-0.0272	0.474	-0.0495	
Sit-Ups	0.1767	0.0312	-0.0177	0.205	0.0234	
600 Yard Walk Run	0.1768	0.0313	0.0083	0.039	-0.0619	

N=806; F=3.27 p <.001, F=194 p <.05; r=.095 p <.01, r=.072 p <.05.

			Boys Only			
Flexed Arm Hang	0.0486	0.0024	0.0670	1.410	0.0486	
Sit and Reach	0.0706	0.0050	-0.0533	1.128	-0.0423	
600 Yard Walk-Run	0.0775	0.0060	0.0459	0.620	0.0076	
Jump and Reach	0.0819	0.0067	0.0300	0.300	0.0314	
Soccer Wall Volley	0.0852	0.0073	0.0233	0.207	0.0245	
Sit-Ups	0.0857	0.0074	-0.0121	0.049	0.0011	
Zig Zag Run	0.0859	0.0074	-0.0057	0.012	-0.0083	

N=426; F=3.74 p <.001, F=2.09 p <.05; r=.1[illegible] p <.01, r=.095 p <.05.

			Girls Only			
Soccer Wall Volley	0.1981	0.0392	0.2041	14.274	0.1981	
Shape-o-Ball	0.2445	0.0598	0.1534	8.334	0.1118	UMS
Flexed Arm Hang	0.2526	0.0638	0.0716	1.611	0.0962	
Sit and Reach	0.2610	0.0681	-0.0748	1.965	-0.0353	
Zig Zag Run	0.2624	0.0689	-0.0288	0.263	-0.0287	
600 Yard Walk-Run	0.2626	0.0689	-0.0091	0.027	-0.0690	
Jump and Reach	0.2627	0.0690	0.0083	0.025	0.0520	

N=380; F=3.74 p <.001, F=2.09 p <.05; r=.132 p <.01, r=.101 p <.05.

*SPSS Stepwise Multiple Regression for forward selection procedure.

TABLE 43

AGE STEPWISE REGRESSION SUMMARY TABLES
FOR SIXTH GRADE *

Variable	Multiple R	R^2	Beta	F Value	Simple r	
			Total Group			
Shape-o-Ball	0.1900	0.0361	0.1844	20.353	0.1900	
Jump and Reach	0.2349	0.0552	0.1617	13.555	0.1567	
Sit and Reach	0.2405	0.0579	0.0556	1.778	-0.0004	UMSE
Flexed Arm Hang	0.2436	0.0593	-0.0372	0.615	0.0132	
Soccer Wall Volley	0.2456	0.0603	0.0373	0.702	0.0387	
600 Yard Walk-Run	0.2471	0.0611	0.0359	0.519	-0.0075	
Sit-Ups	0.2472	0.0611	0.0061	0.017	0.0202	
Zig Zag Run	0.2472	0.0611	-0.0053	0.012	0.0085	
N=615; F=3.27 p <.001, F=1.94 p <.05; r=.108 p <.01, r=.083 p <.05.						
			Boys Only			
Jump and Reach	0.1963	0.0385	0.2247	12.754	0.1963	
Shape-o-Ball	0.2603	0.0678	0.1737	9.081	0.1830	
Sit and Reach	0.2802	0.0785	0.1164	3.922	0.0688	
Flexed Arm Hang	0.2834	0.0803	-0.0362	0.302	0.0434	UMSE
Soccer Wall Volley	0.2853	0.0814	-0.0408	0.447	-0.0113	
Zig Zag Run	0.2865	0.0821	-0.0342	0.285	-0.0247	
600 Yard Walk-Run	0.2874	0.0826	0.0259	0.149	-0.0407	
N=305; F=3.74 p <.001, F=2.09 p <.05; r=.147 p <.01, r=.112 p <.05.						
			Girls Only			
Shape-o-Ball	0.1870	0.0350	0.1665	8.039	0.1870	
Flexed Arm Hang	0.2259	0.0511	-0.1096	2.931	-0.1326	
600 Yard Walk-Run	0.2365	0.0559	0.0927	2.071	0.1226	UMSE
Jump and Reach	0.2457	0.0603	0.0817	1.902	0.0640	
Sit and Reach	0.2579	0.0665	0.0841	1.847	-0.0057	
Zig Zag Run	0.2677	0.0716	0.0983	2.229	0.1476	
Soccer Wall Volley	0.2728	0.0744	0.0569	0.875	0.0035	
Sit-Ups	0.2737	0.0749	0.0259	0.153	-0.0611	
N=310; F=3.27 p <.001, F=1.94 p <.05; r=.146 p <.01, r=.112 p <.05.						

*SPSS Stepwise Multiple Regression for forward selection procedure.

TABLE 44

Prediction of Self Concept Variable for Reading

	N	Multiple R and Single r	R^2	F Value
		Total Subjects		
Second Grade	628	0.14201*	0.02017	12.884 *
Fourth Grade	832	0.18777*	0.03526	30.333 *
Sixth Grade	489	0.16676*	0.02781	13.931 *
		Boys Only		
Second Grade	327	0.14297**	0.02044	6.782 ***
Fourth Grade	432	0.21094*	0.04449	20.023 *
Sixth Grade	243	0.23222*	0.05392	13.737 *
		Girls Only		
Second Grade	301	0.13245**	0.01754	5.339 ****
Fourth Grade	400	0.15839*	0.02509	10.242 **
Sixth Grade	246	0.11611***	0.01348	3.335

*p $\leq$.001 **p $\leq$.005 ***p <.05

p $\leq$.001

*p $\leq$.001 **p $\leq$.01 ***p $\leq$.035 ****p <.05

TABLE 45

Prediction of Self Concept Variable for Mathematics

	N	Multiple R and Single r	R^2	F Value
		Total Subjects		
Second Grade	628	0.12819*	0.01643	10.458 **
Fourth Grade	832	0.23406*	0.05478	48.106 **
Sixth Grade	489	0.17254*	0.02977	14.943 *
		Boys Only		
Second Grade	327	0.09289**	0.00863	2.829
Fourth Grade	432	0.22401*	0.05018	22.718*
Sixth Grade	243	0.22175*	0.04917	12.464*
		Girls Only		
Second Grade	301	0.16833**	0.02834	8.719 ***
Fourth Grade	400	0.24507*	0.06006	25.431 *
Sixth Grade	246	0.13534***	0.01832	4.553****

*p $\leq$.001 **p $\leq$.002 ***p <.02 ****p <.05

TABLE 46

Prediction of Mathematics Variable for Reading

	N	Multiple R and Single r	R^2	F Value
		Total Subjects		
Second Grade	635	0.71327*	0.50875	655.552 *
Fourth Grade	836	0.80008*	0.64013	1483.501 *
Sixth Grade	495	0.67601*	0.45699	414.901 *
*p ≤.001				
		Boys Only		
Second Grade	329	0.72976*	0.53255	372.535 *
Fourth Grade	434	0.80643*	0.65034	803.432 *
Sixth Grade	248	0.72039*	0.51897	265.401 *
*p ≤.001				
		Girls Only		
Second Grade	306	0.72298*	0.52270	322.921 *
Fourth Grade	402	0.80164*	0.64262	719.258 *
Sixth Grade	247	0.63133*	0.39858	162.369 *
*p ≤.001				

TABLE 47 (Continued)

Percentile Norms and Other Normative Data
Jump and Reach (in) for Boys

	Grade Level			Age in Years							
%tile	Second	Fourth	Sixth	7	8	9	10	11	12	13	14
44											
43						9.0					
42		9.5									
41											
40	7.5		11.5				9.0	10.5			
39											
38										12.5	
37					7.5				11.5		
36		9.0		7.0				10.0			12.0
35			11.0								
34											
33						8.5				12.0	
32											
31	7.0									11.0	
30											
29									11.0		11.0
28					7.0	8.0	8.5				
27			10.5								
26								9.5	10.5		
25		8.5		6.5						10.5	
24			10.0								
23										10.0	
22							8.0		10.0		
21		8.0									10.5
20	6.5							9.0			
19											
18						7.5					
17		9.5		6.0	6.5					9.5	
16											
15						7.0			9.5	9.0	
14	6.0	7.5	9.0				7.5				9.0
13		7.0					7.0	8.5			
12								8.0	9.0		
11				5.5	6.0	6.5					
10											
9	5.5					6.0		7.5			
8		6.5	8.5					7.0	8.5	8.5	
7			8.0				6.5				7.0
6	5.0				5.5			6.5	8.0		
5		6.0		5.0	5.0						
4		5.5	7.5			5.5	6.0	6.0		8.0	
3	4.5		7.0		4.5	5.0	5.5		7.5		
2	3.5	5.0	6.5	4.5	4.0	4.0	5.0		7.0	5.5	
1	3.0	2.5	6.0		3.0	3.0	2.5				
N	435	433	321	121	248	200	223	169	147	48	14
Mean	8.299	10.427	12.891	8.033	8.500	10.060	10.222	11.565	13.092	13.510	14.679
SD	2.096	2.604	3.748	1.925	2.065	2.799	2.567	3.375	3.749	3.436	4.602
SE	0.100	0.125	0.209	0.175	0.131	0.198	0.172	0.260	0.309	0.496	1.230
Range	15-0	19-2	31-55	13.5-4.5	15-3	19-2	16-0	29-6	31-7	22-5.5	23-7
Sk	0.185	[illegible]	1.302	0.717	0.261	0.250	-0.218	1.868	1.551	-0.076	0.229
K	0.819	-0.136	3.784	0.516	0.478	0.132	[illegible]	7.488	4.686	-0.275	-0.324
Mdn	8.121	10.287	12.242	7.857	8.321	9.875	10.016	11.162	12.600	14.000	14.250
Mo	8.000	9.000	12.000	8.000	9.000	11.000	9.000	11.000	12.000	16.000	14.000

TABLE 47

Percentile Norms and Other Normative Data
Jump and Reach (in) for Boys

	Grade Level			Age in Years							
%ile	Second	Fourth	Sixth	7	8	9	10	11	12	13	14
99	13.5	16.0	27.0		14.0	16.5	15.5	24.0	27.0	21.0	23.0
98	13.0	15.5	24.0	13.0	13.0	16.0	15.0	22.0	25.0	19.0	
97	12.5	15.0	22.0	12.5	12.5	15.5		17.0	21.0		
96	12.0		19.0	12.0		15.0	14.5	16.5	19.0		
95		14.5	18.0		12.0		14.0		18.0		
94				11.0		14.5		15.5	17.5	18.0	
93	11.5	14.0	17.5					15.0	17.0		22.0
92	11.0		17.0		11.5	14.0					
91							13.5	14.5			
90				10.5	11.0					16.5	
89			16.5			13.5	13.0				
88		13.5		10.0				14.0	16.5		
87	10.5					13.0					
86	10.0	13.0	16.0		10.5				16.0		18.0
85											
84					10.0						
83						12.5	12.5			16.0	
82			15.5						15.5		
81		12.5				12.0					
80				9.5				13.5			
79				9.0							17.0
78	9.5		15.0				12.0				
77								13.0	15.0		
76		12.0	14.5		9.5						
75											
74						11.5			14.5		
73											
72	9.0		14.0								
71						11.0		12.5			16.5
70				8.5					14.0		
69					9.0		11.5			15.5	
68											
67		11.5						12.0			
66											
65											
64			13.5	8.0							16.0
63		11.0					11.0			15.0	
62									13.5		
61			13.0			10.5					
60	8.5										
59											
58									13.0	14.5	
57											15.5
56							10.5				
55					8.5	10.0		11.5			
54		10.5	12.5								
53											
52											
51	8.0						10.0		12.5	14.0	
50		10.0	12.0					11.0			14.0
49					8.0	9.5					
48										13.5	
47									12.0		
46				7.5			9.5			13.0	
45											

TABLE 48 (Continued)

Percentile Norms and Other Normative Data
for Jump And Reach (in) for Girls

	Grade Level			Age in Years							
%tile	Second	Fourth	Sixth	7	8	9	10	11	12	13	14
44									10.5		
43	7.0										9.5
42		8.0	10.0		7.0		8.5				
41											
40											
39								9.5			
38									10.0		
37							8.0			10.5	
36											
35											
34											
33				6.5		7.5		9.0	9.5		
32					6.5						
31	6.5	7.5									
30			9.5								
29										10.0	9.0
28									9.0		
27			9.0				7.5				
26											
25											
24				6.0		7.0		8.5			
23										9.5	
22	6.0	7.0									
21					6.0			8.0			
20									8.5		
19							7.0				
18											
17						6.5				9.0	
16		6.5	8.5								
15	5.5			5.5	5.5						
14							6.5	7.5			8.0
13											
12	5.0			5.0	5.0	6.0					
11		6.0	8.0						8.0		
10											
9							6.0	7.0			
8									7.5		
7			7.5		4.5	5.5			7.0		
6	4.5			4.5				6.5	6.5	8.0	
5		5.5	7.0								
4		5.0				5.0	5.5	6.0	6.0		
3	4.0		6.5		4.0	4.5		5.0		7.0	
2		4.5	6.0	4.0	3.5	4.0	5.0		5.5		
1	3.5	4.0	5.0	3.0	3.0	3.5	4.5	4.5	5.0		
N	406	392	325	123	238	203	182	183	137	35	7
Mean	7.649	8.876	11.374	7.349	7.607	8.586	9.184	10.525	11.630	12.014	10.357
SD	1.860	2.147	3.642	1.854	1.821	2.030	2.196	2.966	4.484	2.790	1.952
SE	0.092	0.108	0.202	0.167	0.118	0.143	0.163	0.219	0.383	0.472	0.738
Range	14-2	16-3.5	31-4	12-3	12.5-2	16-3.5	16-4.5	30-4	31-5	18.5-7	13.5-8
Sk	0.095	0.356	2.828	0.217	-0.067	0.323	0.371	1.745	2.854	0.565	0.771
K	0.077	0.208	13.076	-0.370	0.078	0.625	0.011	9.569	10.533	-0.113	-0.464
Min	7.750	8.837	10.879	7.278	7.793	8.521	9.068	10.156	11.054	11.500	9.875
Mo	8.000	9.000	10.000	7.000	8.000	9.000	9.000	10.000	12.000	9.000	10.000

TABLE 48

Percentile Norms and Other Normative Data
for Jump And Reach (in) for Girls

Percentile	Grade Level			Age in Years							
	Second	Fourth	Sixth	7	8	9	10	11	12	13	14
99	12.0	14.5	20.0	11.5	12.0	14.0	15.0	18.5	20.0	18.5	13.5
98	11.5	13.5	19.0	11.0	11.5	13.0	14.0	17.0	19.0		
97	11.0	13.0	18.0		11.0	12.5	13.0	16.0	18.0	18.0	
96		12.5	16.0		10.5	12.0		15.0	17.0		
95			15.5				12.5		16.0		
94	10.5		15.0						15.5	17.0	
93		12.0		10.5	10.0	11.5		14.5	15.0		
92								14.0			
91			14.5	10.0			12.0			16.0	
90		11.5				11.0			14.5		
89					9.5			13.5		15.0	
88			14.0	9.5		10.5			14.0		
87		11.0						13.0			
86					9.0		11.5			14.5	12.5
85							11.0				
84			13.5								
83	9.0							12.5	13.5		
82		10.5				10.0					
81			13.0	9.0							
80									13.0	14.0	
79											
78								12.0			
77							10.5		12.5		
76		10.0	12.5								
75											
74										13.5	
73				8.5	8.5	9.5					
72	8.5										
71			12.0				10.0	11.5	12.0		10.0
70											
69										13.0	
68				8.0							
67		9.5				9.0					
66								11.0			
65											
64	8.0										
63					8.0						
62							9.5				
61			11.5								
60		9.0								12.0	
59									11.5		
58								10.5			
57			11.0	7.5							
56											
55											
54											
53											
52											
51						8.5		10.0		11.5	
50	7.5			7.0			9.0		11.0		
49					7.5					11.0	
48		8.5	10.5								
47						8.0					
46											
45											

TABLE 49 (Continued)

Percentile Norms and Other Normative Data
for Sit-Ups for Boys

%tile	Grade Level			Age in Years							
	Second	Fourth	Sixth	7	8	9	10	11	12	13	14
44			32		24		27	31			
43						27			30		
42		27								33	
41								30			
40				23		26	26				
39		26									
38	23		31		23	25				32	
37							25		29		
36		25	30								32
35	22			22	22			29			
34						24			28		
33				21							
32			29				24	28	27		
31	21	24				21	23	27			
30											
29			28		20	23					31
28		23						26	26		
27	20		27		20		22				
26				19		22					
25								25	25		
24	19	22	26						24		
23				18	19	21	21	24		29	
22											
21	18	21	25		18		20				29
20			24					23	23		
19	17	20			17	20	19			27	
18		19	23	17		19					
17											
16						18	18		22		
15	16	18		16	16			22			
14			22			17	17	21		23	26
13	15	17	21	15	15			20	21		
12			20	14			16	18	20		
11	14		19		14	16					
10	13	16	18		13	15	15	17	19	21	
9	12	15		13	12			16			
8				12		14	14		18	18	
7	11	14	17	11	11		13				13
6	10		16		10		12		17		
5	9	13	15	10	9	13	11	15	15		
4	8	12	14	8		12	10	14	14	15	
3	7	10	13	1	7	10	9	13	11		
2	5	9	11		6	7	8	9	10	14	
1	1	6	9		3	1	6	3	3		
N	434	435	322	120	248	203	222	169	143	48	14
Mean	24.774	28.379	32.932	24.367	24.903	27.798	27.910	31.793	32.182	34.250	34.714
SD	8.231	8.604	9.530	8.491	8.133	8.758	8.794	9.526	9.652	3.864	8.695
SE	0.395	0.416	0.531	0.775	0.516	0.6.5	0.590	0.733	0.792	1.279	2.324
Range	50-0	52-0	57-3	46-0	50-0	51-0	51-2	52-3	57-3	55-14	46-13
Sk	-0.416	-0.364	-0.449	-0.418	-0.392	-0.373	-0.384	-0.476	-0.325	-0.109	-1.051
K	0.500	0.058	0.012	0.834	0.285	0.308	-0.111	0.016	-0.104	0.654	1.802
Mdn	25.658	29.914	34.125	25.500	25.731	29.200	29.658	32.889	32.786	34.700	33.500
Mo	30.000	30.000	32.000	29.000	30.000	30.000	30.000	39.000	30.000	32.000	33.000

TABLE 49

Percentile Norms and Other Normative Data
for Sit-Ups for Boys

	Grade Level			Age in Years							
%tile	Second	Fourth	Sixth	7	8	9	10	11	12	13	14
99	45	46	52	45	41	46	44	51	54	54	46
98	40	43	50	40	39	44	42	50	47	53	
97	38	42	47	38	37	43	41	48	46		
96	37	40	46	37	36	42	40	46	45	51	
95	36					40		44			
94	35		45	36	35					47	
93	34	39	44	35	34	39	39	43	44		45
92				34						44	
91						38	38				
90	33	38								42	
89			43	33		37	37	42			
88		37		32	33				43		
87						36					
86			42					41	42		43
85	32										
84		36		31			36				
83					32			40		41	
82			41			35					
81	31								41		
80		35					35				
79					31	34		39		40	41
78			40						40		
77											
76	30						34				
75		34				33				38	
74			39						39		
73				29	30						
72								38			
71							33				39
70		33				32			38		
69	29		38							36	
68								37	37		
67					29		32				
66		32									
65				28		31					
64	28		37					36			38
63					28						
62								35			
61									36		
60							31		35		
59	27	31	36		27						
58				27		30				35	
57							30				37
56			35					34			
55		30							34		
54	26				26						
53				26				33	33		
52											
51			34			29					
50				25							33
49	25				25		29		32		
48			33			28		32		34	
47		29									
46				24			28				
45	24	28							31		

TABLE 50 (Continued)

Percentile Norms and Other Normative Data
for Sit-Ups for Girls

	Grade Level			Age in Years							
%tile	Second	Fourth	Sixth	7	8	9	10	11	12	13	14
44	23			23				27	27		
43									26		25
42							25				
41			27		22	23		26			
40		23								27	
39							23				
38	22		26					25			
37					21				25		
36			25	22							
35	21										
34						22		24		26	
33		22		21	20		22				
32									24		
31	20		24							25	
30											
29		21				21	21			24	24
28											
27								23	23		
26		20	23	20							
25	19				18	20	19		22		
24								22			
23	18	19	22		17						
22											
21	17			19				21			
20					16	19	18	20	21	22	
19		18	21								
18				18		18			20		
17	16				15		17			20	
16		17				17					
15			20	17							
14	15				14		16	19	19		23
13		16			13				18		
12	14		19	16				18	17		
11	13	15	18	15	12	16	15		16	18	
10			17	14		15		17	15		
9									14	15	
8	12	14	16	13	11	14	14	16			
7			15					15	13		
6	11	13	14			13	12			14	
5		12	13	12		12		14	12		
4	10	11			10	11	11	13	11		
3	9	10	11	11	8	8	10	10	8	13	
2	6	9	9	10	5	7	9		4		
1	4	5	4		2	5	5	9	3		
N	404	391	330	123	236	203	182	185	139	35	7
Mean	23.993	25.468	29.052	24.301	23.712	25.217	25.904	28.746	28.453	28.829	28.286
SD	7.639	7.754	8.922	6.408	8.041	7.607	8.276	8.549	9.711	7.917	4.680
SE	0.380	0.392	0.491	0.578	0.523	0.534	0.613	0.629	0.824	1.338	1.769
Range	50-0	46-0	57-0	38-10	43-0	50-0	46-0	51-7	57-0	48-13	36-23
Sk	-0.261	-0.155	-0.119	-0.187	-0.284	-0.233	-0.227	-0.090	-0.050	-0.127	-0.540
K	0.191	-0.150	0.379	-0.335	-0.206	-0.522	-0.232	-0.389	-0.723	0.237	-0.649
Mdn	24.605	25.675	29.583	24.750	24.500	25.615	26.900	28.900	28.444	29.667	28.000
Mo	23.000	23.000	31.000	27.000	25.000	23.000	28.000	24.000	28.000	32.000	31.000

TABLE 30

Percentile Norms and Other Normative Data
for Sit-Ups for Girls

%tile	Grade Level			Age in Years							
	Second	Fourth	Sixth	7	8	9	10	11	12	13	14
99	39	42	51	37	40	40	43	46	50	46	36
98	37	40	46	36	37	39	42	45	47		
97		39	45			37	39	44	46	44	
96	36	38	44					43	45		
95		37		35	36		38	42			
94	35		43	34	35	36		41	44	41	
93			42				37	40	43		
92	34	36	41	33	34	35			41		
91			40	32			36	39		38	
90	33	35	39		33	34			40		
89								38	39	37	
88	32	34	38	31			35				
87						33			38		
86					32				37		31
85	31	33	37	30					36		
84						32	34	37			
83					31					35	
82	30			29			33		35		
81		32	36								
80					30				34	33	
79						31		36			
78			35								
77	29						32			32	
76								35	34		
75		31		28		30					
74					29						
73		30	34								
72	28							34			
71					28	29	31		33		
70											
69		29	33				30				
68				27				33			
67											
66	27	28			27	66				31	
65									32		
64											
63			32				29	32	31		
62						27					
61					26						
60	26	60	31				28	31			
59				26							
58											
57					25					30	
56						26		30	30		
55											
54	25	26							29		
53			30				27				
52								29			
51				25							28
50	24		29	24	24			28	28		
49		25				25				29	
48							26				
47											
46			28			24				28	
45		24			23						

TABLE 51 (Continued)

Percentile Norms and Other Normative Data
for Flexed Arm Hang (sec) for Boys

	Grade Level			Age in Years							
%tile	Second	Fourth	Sixth	7	8	9	10	11	12	13	14
44		18									
43	14			12		18	17	17		20	
42			19		14				20		16
41		17	18			17	16				
40	13	16			13		15			19	
39			17					16	19		
38				11		16				18	
37		15							18		
36	12		16	10	12				17		14
35						15		15	16		
34							14			17	
33			15						15		
32	11	14					13				
31			14	9	11			14	14		
30		13				14	12			16	
29				8					13		13
28	10		13			13	11	13		15	
27		12							12		
26			12		10	12			11	14	
25							10	12		13	
24	9	11	11						10	12	
23					9	11		9	9		
22	8		10	7					8		8
21				6	8			11			
20		10	9			10			7		
19	7				7		8	10		11	
18		9	8								
17	6		7			9		9	6	10	
16		8		5	6				5		
15						8	7			9	
14			6			7		8		8	6
13	5	7	5		5	6	6			7	
12		6		4				7	4	6	
11			4							5	
10							5	6	3		
9	4	5	3			5	4	5	2	4	
8		4	2		4		3	4			
7		3		3		4	2	3			1
6	3	2	1			3	1	2	0	2	
5		1		2	3	1	0	1		1	
4	2			1	2	0		0		0	
3	1			0							
2					1						
1					0						
N	435	435	321	121	248	203	222	170	147	47	14
Mean	18.526	23.226	26.251	16.831	19.009	22.558	22.272	26.100	25.788	28.100	30.943
SD	13.422	16.396	20.037	12.902	13.836	15.525	16.179	19.557	19.198	20.052	26.681
SE	0.644	0.786	1.118	1.173	0.879	1.090	1.086	1.500	1.583	2.925	7.131
Range	90-0	90-0	90-0	90-0	88-0	90-0	86-0	90-0	90-0	90-0	89-1
Sk	1.614	1.258	1.098	1.960	1.605	1.597	1.164	1.135	0.979	0.936	0.94
K	4.387	2.455	1.130	7.793	3.835	5.009	1.804	1.111	1.172	0.664	-0.17
Mdn	15.965	20.008	22.012	13.975	16.007	20.967	19.350	20.970	23.000	22.800	19.90
Mo	4.000	0.000	0.000	6.000	5.000	0.000	0.000	0.000	0.000	0.000	1.00

TABLE 51

Percentile Norms and Other Normative Data
for Flexed Arm Hang (sec) for Boys

Percentile	Grade Level			Age in Years							
	Second	Fourth	Sixth	7	8	9	10	11	12	13	14
99	64	75	89	52	70	75	75	78	80	80	80
98	52	69	77	46	53	57	68	76	75	66	
97	49	60	75	41	50	55	60	72	70	65	
96	47	57	70	38	48	52	53	70	65	64	
95	46	53	66	37	47	50	50	66	63	63	
94	44	50	63	34	46	49	49	62	58	62	
93	41	48	62	33	45	46	47	59	57		63
92	36	47	58	32	41	42	46	57	55	60	
91	34	46	56		37	39	44	55	51		
90	33	45	55		36	38		53	50		
89		43	53		34	37	43	51	49	57	
88		42	51	31	33	36	42	50	48		
87	32	41	50	30	32	35	40	49	47	56	
86	31	40	48	29	31		39	48	46		62
85	30	38	46			34	38	47	44	51	
84	29		44	28	30			46	42		
83		37	43	27	29	33	37	45	41	46	
82	28	36	42		28		36	44		45	
81		35	41			32	35	41	40	44	
80	27		40	26	27			40	39	43	
79		34					34	39	38	42	
78	26	33	39	25	26	31	33	38		41	57
77			37				31	37	37	40	
76	25	32	36		25				36		
75		31		24		30		36	35	39	
74	24		35	23	24		30	35		38	
73			34					34	34		
72		30				29	29	33		37	
71	23		33		23	28					43
70		29	32	22	22		28	32	33	36	
69	22						27	31			
68		28	31	21		27	26	30	32	35	
67	21	27			21			29	31	34	
66			30	20		26	25			33	
65		26	29	19			24		30	32	
64	20			18	20			28		31	22
63		25	28	17		25		27	29	30	
62		24								29	
61	19		27		19	24	23	26	28	28	
60										27	
59			26				22	25	27		
58	18	23		16		23			26		
57			25		18		21	24		26	20
56		22									
55			24	15				23		24	
54	17					22	20	22	25		
53		21	23						24	23	
52					17			21			
51	16	20	22	14	16	21					
50									23		19
49		19	21				19	20	22	22	
48	15					20					
47				13	15						
46							18	19	21		
45			20			19		18		21	

TABLE 52 (Continued)

Percentile Norms and Other Normative Data
for Flexed Arm Hang (sec) for Girls

	Grade Level			Age in Years							
%ile	Second	Fourth	Sixth	7	8	9	10	11	12	13	14
44			11								
43							11	13			11
42		10									
41				11	10				9	10	
40	10		10			9	10				
39		9						12			
38				10						9	
37							9				
36						8		11			
35			9						8	8	
34	9	8			9			10			
33						7			7		
32				9						7	
31							8				
30			8					9			
29		7			8					6	
28	8								6		
27											
26			7	8		6	7	8			
25		6									
24					7					5	
23	7						6				
22											
21			6						5		
20		5		7			5	7			
19						5					
18							4		4	4	
17	6	4			6						
16			5	6		4					
15					5			6		3	
14	5			5			3		3		6
13		3				3					
12			4					5	2		
11	4	2			4	2	2				
10				4							
9			3						1	2	
8					3						
7	3	1	2			1	1	4	0		
6		0	1	3	2	0				1	
5	2				1		0				
4	1		0	2	0						
3	0			1				3		0	
2				0				0			
1											
N	403	391	327	121	237	203	182	184	138	34	7
Mean	15.580	15.962	16.481	15.745	15.302	14.832	17.418	19.112	14.046	14.341	14.506
SD	12.580	13.977	13.784	10.982	12.147	12.735	15.481	15.296	12.070	12.288	6.740
SE	0.604	0.707	0.762	0.998	0.789	0.894	1.147	1.128	1.027	2.107	2.548
Range	84-0	90-0	90-0	63-0	73-0	84-0	90-0	90-0	72-0	53-0	27-6
Sk	1.800	1.673	1.798	1.427	1.724	1.702	1.660	1.662	1.745	1.834	0.827
K	4.681	3.798	4.291	2.911	3.746	4.431	17.418	3.168	4.449	4.337	0.891
Mdn	12.040	12.275	13.040	13.100	12.015	11.857	13.017	15.050	11.050	14.050	12.300
Mo	7.000	0.000	0.000	15.000	12.000	0.000	0.000	5.000	0.000	5.000	11.000

TABLE 52

Percentile Norms and Other Normative Data
for Flexed Arm Hang (sec) for Girls

Percentile	Grade Level			Age in Years							
	Second	Fourth	Sixth	7	8	9	10	11	12	13	14
99	54	61	62	50	54	55	60	62	56	50	27
98	50	55	59	44	51	49	55	61	46		
97	45	49	55	42	49	42	49	60	43	45	
96	42	45	48	40	44	40	46	59	38		
95	40	43	45	35	40	39	45	55	36		
94	38	41	42	34	38	37	44	49	35	32	
93	35	40	40	33	37	36	43	46	32		
92	34	38	38	32	35	34	42	45	31		
91	33	36	35	31	32	33	41	42	30	27	
90	32	35	30	31	32	39	40	29			
89	30	33	31	29	30	31	37	39	27		
88	29	32	30	28	29		36	35	26	23	
87	28	31	29	27	28	30	35	33	25		
86	27	30	28	26	27	29	33	32	24		18
85	26	29	27	25	26	28	32	31			
84	25	28	26	24	24	27	31	30	23		
83	24	27	25		23	26	30	29	22		
82			24			25	29			22	
81	23	26		23	22	24		28			
80	22	25		22		23	28				
79		24			21	22	27	27	21	19	
78		23	23			21		26	20		
77	21	22			20	20	26	25		18	
76		21	22	21			25	24	19		
75	20			20	19		24		18		
74		20				19	23				
73	19		21				22				
72			20	19	18			23			
71	18	19	19			18	21		17	17	17
70								22			
69		18	18	18		17	20				
68	17				17					16	
67		17				16	19	21	16		
66				17	16	15					
65			17					20			
64	16	16					18	19			
63					15		17	18	15		
62	15	15	16						14		
61										15	
60				16	14	14	16	17			
59									13		
58	14				13					14	
57				15		13	15				12
56	13	14	15					16			
55									12		
54		13									
53			14			12	14			13	
52				14							
51							13				12
50	12		13	13	12			15	11	11	
49		12									
48						11					
47			12				12				
46				12	11				10		
45	11	11				10		14			

TABLE 53

Percentile Norms and Other Normative Data
for Soccer Wall Volley for Boys

Percentile	Grade Level			Age in Years							
	Second	Fourth	Sixth	7	8	9	10	11	12	13	14
99	34	44	51	32	35	43	44	50	48	52	48
98	33	42	49	31	34	42	40	49	46	51	
97	32	41	47	30	33	41	39	47	45	50	
96		39	46	29	32	38	38	45		49	
95	31	38	45				37	44	44		
94			44	28	31	37		43		42	
93	30			27				42	43		
92	29		43		30	36	36		42	40	44
91		37	42					41			
90		36			29		35		41		
89						35					
88	28		41	26				40		39	
87		35			28			39	40		
86			40				34	38			
85	27			25							42
84							33				
83		34		24	27	34					
82			39					37	39		
81	26										
80		33					32				
79						32					
78			38		26					38	
77	25	32									38
76						31		36	38		
75					25						
74				23							
73			37				31		37		
72								35			
71		31									
70	24					30					
69											
68			36							37	35
67								34	36		
66					24						
65						29	30				
64		30								36	
63			35	22							
62									35		
61	23										
60								33			
59						28	29				
58					23						
57		29	34							35	
56				21							
55									34	34	
54											
53								32			
52											
51	22		33				28		33		28
50		28				27				33	
49											
48				20							
47					22						
46						26		31	32		
45			32							32	

TABLE 53 (Continued)

Percentile Norms and Other Normative Data
for Soccer Wall Volley for Boys

	Grade Level			Age in Years							
%tile	Second	Fourth	Sixth	7	8	9	10	11	12	13	14
44									31		
43	21	27					27			31	
42			31								
41				19							
40								30			
39											
38					21						
37		26				25			30	30	
36											
35	20		30				26				
34								29			
33									29		
32											24
31											
30			29			24	25	28			
29		25									
28				18	20						
27	19							27		29	
26						23					
25			28				24		28		
24		24				22					
23								26			22
22				17	19						
21										28	
20	18										
19		23	27			21		25	27		
18					18		23				
17										27	
16			26	16					26		
15	17	22				20					21
14								24	25		
13			25				22			26	
12		21			17						
11							21			25	
10	16			15				23			
9		20	24		16	19	20		24	24	
8							19		23	23	15
7	15	19	23	14		18		22	22	22	
6											
5	14	18	22	13	15		18		21		
4	13				14	17	17	21		21	
3		17	21		13	16	16	20	20		
2	12	16	20	12	11	15	15	19		20	
1	11	14	18	11	8	12	14	15	18		
N	434	437	319	121	247	203	224	169	146	48	13
Mean	22.431	28.634	33.458	20.950	22.899	27.517	28.326	32.124	33.233	33.688	31.385
SD	4.945	6.121	6.943	4.457	5.028	6.437	5.827	6.864	6.906	7.066	9.879
SE	0.237	0.293	0.389	0.405	0.320	0.452	0.389	0.528	0.572	1.020	2.740
Range	37-7	50-12	57-15	33-11	36-7	48-12	48-13	52-15	57-18	53-20	48-15
Sk	0.138	0.259	0.323	0.302	-0.006	0.352	0.083	0.432	0.202	0.602	0.134
K	0.216	0.384	0.178	-0.009	0.436	0.189	0.584	0.277	0.149	0.901	-0.868
Mdn	22.333	28.516	33.263	20.667	22.729	27.050	28.389	31.875	33.214	33.167	28.333
Mo	23.000	26.000	31.000	19.000	21.000	26.000	28.000	34.000	31.000	30.000	28.000

TABLE 54 (Continued)

Percentile Norms and Other Normative Data
for Soccer Wall Volley for Girls

	Grade Level			Age in Years							
%tile	Second	Fourth	Sixth	7	8	9	10	11	12	13	14
44							25				
43	18										30
42		27									
41		23				21					
40					18						
39								26			
38									27		
37							24				
36			26	17							
35											
34	17	22							26		
33						20					
32					17		23	25			
31										25	
30											
29										24	28
28		21	25	16							
27											
26						19	22	24	25		
25											
24	16										
23			24		16					23	
22		20		15				23			
21							21				
20						18			24		
19											
18			23				20				
17	15							22	23		
16		19									
15					15						
14				14		17					24
13			22				19				
12								21	22		
11	14	18								20	
10					14						
9			21							18	
8						16	18				
7	13			13				20	21		
6		17		12	13			19			
5	12		20					18			
4			19	11	12		17		20		
3	11	16	18		10	15		17	19	17	
2	10	15		10	9	13	16		18		
1	9	14	17		6	12	14	16			
N	406	392	327	123	238	203	183	184	137	35	7
Mean	19.586	25.314	29.000	18.902	19.773	23.419	26.377	28.549	29.212	27.543	32.429
SD	4.586	5.704	5.710	4.128	4.519	5.423	5.847	5.997	5.480	5.812	6.803
SE	0.228	0.288	0.316	0.372	0.293	0.381	0.432	0.442	0.468	0.982	2.571
Range	38-6	46-13	48-16	32-10	34-6	41-11	46-13	48-15	44-18	41-17	45-24
Sk	0.444	0.557	0.288	0.249	0.210	0.488	0.490	0.234	0.185	0.512	1.022
K	0.817	0.385	-0.130	0.149	0.480	0.253	0.436	-0.180	-0.231	0.228	1.327
Min	19.284	25.208	28.705	18.750	19.667	22.750	26.200	28.500	29.222	26.875	31.000
Mo	17.000	27.000	26.000	18.000	20.000	27.000	28.000	29.000	26.000	26.000	24.000

TABLE 54

Percentile Norms and Other Normative Data
for Soccer Wall Volley for Girls

%tile	Grade Level			Age in Years							
	Second	Fourth	Sixth	7	8	9	10	11	12	13	14
99	32	41	43	28	31	39	42	42	43	40	45
98	29	39	41	27	29	35	40	40	41		
97	28	38	40		28	32	39	39	40	39	
96		36	39	26			37		39		
95	27	35	38	25	27		36	38	37		
94		34				31				37	
93	26	33	37								
92					26		35	37	36		
91		32				30	34				
90	25		36		25		33		35		
89				24				36		36	
88		31	35								
87				23			32	35			
86	24				24	29				33	37
85		30									
84							31				
83							28	34			
82	23		34						34		
81				22	23						
80							30			31	
79											
78		29				27					
77			33					33	33	30	
76	22										
75				21	22						
74		28					29	32			
73			32								
72									32		
71								31		28	32
70	21					26					
69			31								
68				20	21		28				
67		27									
66									31		
65											
64								30			
63						25					
62			30								
61	20										
60							27				
59		26		19		24			30		
58					20			29			
57										27	
56											
55			29								
54						23					
53											
52											
51		25									
50	19						26	28	29		31
49			28			22					
48					19						
47				18							
46		24						27		26	
45									28		

TABLE 53 (Continued)

Percentile Norms and Other Normative Data
for Sit and Reach (cm) for Boys

%tile	Grade Level			Age in Years							
	Second	Fourth	Sixth	7	8	9	10	11	12	13	14
44				25				25			
43						24					
42	24		24							24	
41		24					24	24			
40					24						
39									23		
38				24						23	
37						23					
36			23								
35	23						23			22	
34											
33		23	22		23			23	22		
32				23						21	
31									21		28
30	22				22			22			
29			21							20	
28						22	22				
27		22							20		
26			20	22							
25							21	21	19		
24	21										
23				21		21				19	18
22	20		19	20	21		20				
21		21			20				18		
20				19		20		20			
19	19	20									
18			18				19				
17					19				17	18	
16									16		
15		19				19		19	15	17	16
14	18		17	18	18		18				
13			16							16	
12	17	18			17	18		18			
11			15				17		14		
10				17	16						
9		17				17		17			
8	16		14			16	16			15	
7		16						16			13
6		15		16	15	15	15	15			
5	15		13		14	14	14	13	13		
4	14	14	12		13	13	13	12	12	14	
3	13	12	11	15	12	12	12	11			
2	12	11	10	13	11	10		10	11	9	
1	10	10	9	11	9	8	11	7	10		
N	435	436	320	121	248	203	223	169	147	48	13
Mean	25.184	25.585	25.459	25.620	25.230	25.399	25.318	25.923	24.544	26.125	28.692
SD	5.825	5.836	6.954	5.427	5.961	5.980	5.859	6.538	6.580	7.513	8.199
SE	0.279	0.280	0.389	0.493	0.379	0.420	0.392	0.503	0.543	1.084	2.274
Range	43-6	43-8	44-7	36-11	43-6	38-8	41-11	44-7	39-10	42-9	39-13
Sk	-0.350	-0.225	-0.254	-0.354	-0.390	-0.319	-0.179	-0.216	-0.336	-0.128	-0.843
K	-0.027	0.098	-0.461	-0.545	0.286	0.030	-0.158	0.191	-0.661	-0.745	-0.215
Min	25.838	25.885	26.214	26.333	25.909	25.636	25.600	26.455	25.667	26.000	31.000
Mo	26.000	28.000	26.000	30.000	26.000	28.000	25.000	24.000	28.000	32.000	32.000

TABLE 55

Percentile Norms and Other Normative Data
for Sit and Reach (cm) for Boys

	Grade Level			Age in Years							
%tile	Second	Fourth	Sixth	7	8	9	10	11	12	13	14
					37	37	38	43	38	40	39
99	37	38	38								
98	35	37		35	36	36	36	38	36	38	
97	34	35	37	34	35	35	35	37	34		
96			36		34		34	36		37	
95		34				34					
94	33		35	33	33			35	33	36	
93			34								
92		33				33	33	34		35	38
91				32			32		32		
90	32	32			32						
89			33					33			
88				31		32			31	34	
87	31				31		31				
86		31									
85			32			31		32			36
84				30							
83	30									33	
82					30				30		
81											
80		30					30				
79			31		29	30		31			
78										32	32
77	29								29		
76											
75		29				29	29	30			
74											
73			30	29							
72											
71					28		28				
70	28	28				28		29			
69			29						28	31	
68											
67											
66				28				28		30	
65											
64					27						
63	27		28				27				
62											
61		27				27			27		
60											
59								27			
58										29	
57			27	27						28	
56							26			27	
55	26				26	26			26		
54		26									
53											
52										26	
51				26				26			31
50			26								
49						25	25		25	25	
48		25									
47	25										29
46					25				24		
45			25								

TABLE 56 (Continued)

Percentile Norms and Other Normative Data for Sit and Reach (cm) for Girls

	Grade Level			Age in Years							
%tile	Second	Fourth	Sixth	7	8	9	10	11	12	13	14
44											
43											25
42			28								
41	26	27		27	26			27	28		
40						26					
39											
38								26			
37				26			27			28	
36		26	27			25					
35											
34									27		
33	25	25			25						
32			26				26	25			
31						24				25	
30											
29		34		25			25		26	24	21
28			25				24	24			
27	24				24						
26									25		
25			24						24		
24					23	23					
23								23			
22	23	23					23				
21					22						
20			23	24					23		
19								22			
18	22	22				22	22				
17			22		21				22	23	
16	21					21					
15		21		23			21	21	21		
14			21		20	20					20
13	20	20				19	20	20			
12									20		
11		19	20	21	19			19			
10			19			18	19	18			
9	19		18				18		19	22	
8		18				17		17	18		
7			17	20	18				17		
6	18	17	16		17	16			16	21	
5	17				16	15	17	16			
4	16	16		19	15		16		15		
3	15	15	15		14	14	15	15	13	18	
2	14	14	13	16	13	12		13	11		
1	11	8	12	7	11	8	14	9	10		
N	405	393	327	123	237	203	183	184	138	35	7
Mean	27.222	27.954	28.942	27.902	27.249	27.315	28.415	28.212	29.152	29.857	25.857
SD	5.442	6.243	6.587	4.825	5.629	6.320	6.151	6.728	6.738	5.922	4.375
SE	0.270	0.315	0.364	0.435	0.366	0.444	0.455	0.496	0.574	1.001	1.654
Range	41-7	44-3	45-9	40-7	41-10	42-5	44-14	43-3	41-10	45-18	32-20
Sk	-0.626	-0.514	-0.450	-0.808	-0.574	-0.570	-0.261	-0.517	-0.598	0.141	-0.033
K	0.467	0.593	-0.022	2.241	0.061	0.503	-0.285	0.526	-0.010	-0.189	-1.001
Min	27.827	28.736	29.659	28.607	27.792	28.182	29.000	28.900	30.045	29.750	26.000
Mo	31.000	29.000	33.000	31.000	26.000	29.000	29.000	29.000	30.000	33.000	20.000

TABLE 56

Percentile Norms and Other Normative Data
for Sit and Reach (cm) for Girls

%tile	Grade Level			Age in Years							
	Second	Fourth	Sixth	7	8	9	10	11	12	13	14
99	37	40	42	38	37	38	41	42	40	40	32
98	36	38	41	36	36		40	41			
97	35		39	35	35	37	38	38	39	38	
96		37	38				37				
95				34							
94		36				36		37	38	37	
93	34						36				
92			37		34	35					
91								36	37	36	
90		35				34					
89	33		36				35				
88		34		33	33			35	36		
87											
86				32			34				30
85	32		35			33					
84									35		
83					32			34			
82											
81		33		31						35	
80											
79	31		34			32	33				
78								33			
77										34	
76		32			31				34		
75			33			31					
74										33	
73							32		33		
72								32			
71		31									27
70	30										
69				30							
68			32		30	30					
67							31	31	32		
66											
65											
64		30									
63											
62	29		31				30				
61											
60				29	29	29				32	
59								30	31		
58											
57		29									
56			30								
55								29			
54	28				28					30	
53											
52											
51									30		26
50						28	29				
49			29	20	27					29	
48	27	28						28			
47						27			29		
46							28				
45											

TABLE 57 (Continued)

Percentile Norms and Other Normative Data
for Shape-o Ball (sec) for Boys

	Grade Level			Age in Years							
%tile	Second	Fourth	Sixth	7	8	9	10	11	12	13	14
44	200	158	130			170		130		137	
43	204	159		211	200	171	160	131	134	138	117
42	205	161	131		203		162	132			
41	206	162		212	205	172		133	135	140	
40	208	163	132	213	207		163	134	137	141	
39	209	164	133	214	209	173	164	135		142	
38	210	165	134	219	210	174	165	137	138	143	
37	211	166			211	175	166	138			
36	212	167	135		212	176	167			144	119
35	213	168	137	220	213	177		139			
34	215	169		223	218	179	168	140	139	150	
33	219	170	138	226	220	180	169	141	140		
32	220	171	139			181		142	141	154	
31	221	172		227	221	182	170	144	142		
30	222	174	140	228	222	183	171	145		157	
29	225	175	141	229	224	186	173	146		158	130
28	226	176	142	234	226	188	175	147	143	159	
27	227	177			227	189	176	148	144	160	
26	232	178	143	235	230	190	177	149			
25	235	179	144	236	236	192	178	150	145	164	
24	236	180	145	237	238	194	179	151	146		
23	237	182	146	238	240		180	152	147	176	
22	238	185	147		241	199	182	153	148		
21	241	186	148	242	244	200	184	155	150	177	136
20	244	188	149	245	246	204	186	156	151	180	
19	246	189	151	247	205	188	138	152	186		
18	251	191	154	252	251	206	189	161	156		
17	255	193	156	253	254	210	191	162	161	192	
16	260	197	157	258	260	211	195	163	193		
15	266	200	161	266	266	216	197	167	166	194	
14	270	201	164	270	268	223	199	174	168	197	149
13	274	204	168	271	276	201	181	172	201		
12	279	206	173	276	279	232	204	183	175	202	
11	282	207	176	288	282	235	206	184	177	203	
10	289	211	183	295	285	236	210	186	182		
9	296	215	186	299	291	237	212	191	183		
8	302	219	192	305	299	242	216	192	184	209	
7	315	224	194	313	306	256	219	201	190		225
6	322	231	202	315	317	261	225	202	199	218	
5	329	234	203	322	323	272	232	208	203		
4	338	243	218	325	338	289	243	211	247	229	
3	367	275	239	329	367	315	276	212	270		
2	407	282	251	390	404	326	282	220	298	254	
1	441	319	274	410	575	333	405	234	344	275	
N	435	435	321	121	248	203	223	169	147	47	14
Mean	208.524	158.536	131.583	212.033	206.198	170.360	161.117	132.314	135.701	147.553	128.429
SD	71.284	46.635	45.015	60.187	72.574	53.386	58.814	37.381	53.687	46.091	48.595
SE	3.418	2.236	2.513	5.472	4.608	3.747	3.938	2.815	4.428	6.723	12.988
Range	88-696	78-409	62-497	104-441	88-607	78-407	79-696	62-251	67-497	72-309	72-239
Sk	2.288	1.503	2.699	1.084	2.163	1.299	4.239	0.936	3.118	1.325	1.474
K	9.730	4.073	14.809	2.032	8.117	2.476	32.099	0.666	15.489	2.268	1.742
Mdn	194.125	151.625	124.625	208.667	192.500	163.750	153.750	123.333	129.000	133.000	116.500
Mo	181.000	139.000	100.000	189.000	160.000	133.000	126.000	113.000	139.000	97.000	114.000

TABLE 37

Percentile Norms and Other Normative Data
for Shape-o Ball (sec) for Boys

%ile	Grade Level			Age in Years							
	Second	Fourth	Sixth	7	8	9	10	11	12	13	14
99	107	83	69	104	98	85	83	75	69	75	75
98	110	88	71	107	109	82	92	76	70		
97	113	94	75	112	112	97	94	77	73		
96	121	98	77	128	117	100	99	82	75	93	
95	127	100	81	129	121	101	104	83	78		
94	130	103	82	130	125	104			80		
93	134	104	83	136	127	107	105	85	84		
92	136	106	85	137	131	110	106	88	87	97	
91	138	108	87		133	113	108	89	88		
90	140	110	90	138	137	114	110	90	89		
89	143	112	91	143	142	115	111	92	90	101	
88	145	113		145	143	117	112	93	91		
87	147	114	92	150	145	119	114	94		102	
86	148	115	93	151	146	120	116	95	92		
85	149	116	94	152	147	121	117	96	93		85
84	150	117	95	153	148		118	97	96		
83	152		96	159	150	122		98	97	106	
82	153	118	97	165	151	124	119	99	99		
81	155	119	98	170	152	125				109	
80	156		99	171	153	126	120	100			
79	158	120			155	127	121	102	100	115	90
78	159	121	100	174		128	124		102		
77	160	122	101		156	129		103			
76	162	124	102	175	158	130					
75	165	125			159	133		104	103	117	
74	166		103	176	160	134	126		104		
73	169	126	104		161	135	128	105	105		
72	170	127		177	165	136	129	107	106		
71	171	128	105	180	166	137	131	108	107		92
70	172	129	106		167	138	132	109	108	121	
69	173	131		181	168		135	110	110		
68	174	132	107		170	139		111	111	125	
67		133	109	182	171	140		112	112		
66	175	135	110	183	172	141	136		113	126	
65	176		112	184	173	142	137	113			
64	178	136	113	185	174	143	138	115	114	127	
63	179	137		187	175	145		116	115		
62	180	138	115	188	176	147	139		117	128	
61					178	148	141	117	118		
60	181	139	116		179	149	143	118	120	129	
59	182	141	117	189	180	151	144				
58	183	142	118	190	181	153		119	121		
57	184	143	119	193	182	155	145		122	130	114
56	185	144	120	194	183	156		120	123		
55	186	145		195	184	158	146			131	
54	187	146	121	197	185	159	147	121	124		
53	188	147		205	187	160	149		125		
52	190	148	122	206	188	161	150		127	132	
51	191	149	123	207	190	162	152	122	128		
50	193	151	124	208	192	163	153	123	129	133	116
49	194	152	125		193	165	155	124			
48	195	153	127	209	195	166	156	125	130		
47	197	155	128		197	168	157	126	131	134	
46	198	156		210	198		158	128	132		
45	199	157	129		199	169	159	129	133	136	

TABLE 38

Percentile Norms and Other Normative Data for Shape-o Ball (sec) for Girls

Grade Level				Age in Years							
Title	Second	Fourth	Sixth	7	8	9	10	11	12	13	14
99	111	94	67	123	109	81	95	75	67	87	
98	120	98	74	130	114	94	98	80	70		
97	125	100	79	133	120	97	100	82	72		
96	128	101	80	136	125	100	101	84	75		
95	131	104	81	137	129	105	102	85	76		
94	134	106	83	138	130	107	104	89	79	91	
93	136	107	85	140	131	108	105	90	80		110
92	137	108	86	143	134	110	107		81		
91	140	111	87	144	136	112	111	91	83	92	
90	142	112	88		137	114		92	85		
89	145	113	89	148	140	115	112	94			
88	146	114		154	142	116	113	95	86		
87	147	115	90	156	143	118	114				
86	148	116	91	158	145	119		96	87		
85	150	117	92	159	146	120	115	97			
84	151	118	93	161	147	121	116	98	88		
83	152	119		165	148	122	117			94	
82	153	120	94	167	149	123	118		89		
81	155	121	95	168	150	124	119	99	90		
80	156	122	96	170	151	126	120	100	92	99	
79	157	123	97	1 ?	152		123		93		114
78	159	124	98		153	127	124	101			
77	160	125	99	173	154		125	104	94	102	
76	162	126	100		155	128	126	105			
75	164	127		174	156		127		95		
74	165	128	101		157	129	128	106	98		
73	166		102		158	130		107	100		
72	167	129	103	178	159				101		
71	168		104		160	131	129	108		105	
70	169		105	179	161		130	109	102		
69	170	130		180	162	132	131	110	103	106	
68	172	131	106	184	163	133		111			
67	173	132	107	187	164	134	132		104		
66	174	133		188	165	13[illegible]	133		106	108	
65	175	134	108	189	166	136	134		107		
64	176		109	190	167	137		112	108		124
63	178	135	110		168	139	135	113	110	109	
62	179	136	111			141		114	111		
61	180			192	169	142	136	115	112		
60	181	137	112	194	170	143	137	116	113	111	
59	183	138		196	171	144	138	117			
58	185	139	113	197	172	145	139	118			
57	187	140	114	198	173		140		114	130	
56	188	141	115	199	174	146	141	119	115		
55	189	142	116		176	147		120	116		
54	190	143		200	178	148	142	121	117	137	
53	191		118	202	180	149		122	118		
52	192	144	119	203	181			124		138	
51	194	145		204	182		143	126	119		
50	196	146	120	205	185	150	144	127	120	142	148
49	197		121		186						
48	199	147	122	206	187		145	128	121		
47	200	148	123	207	188	151	146		122		
46	201		125	208	189	152	147	130	123	146	
45	202	149	126	209	190	153	148	131	124		

TABLE 58 (Continued)

Percentile Norms and Other Normative Data
for Shape- o - Ball (sec) for Girls

	Grade Level			Age in Years							
%tile	Second	Fourth	Sixth	7	8	9	10	11	12	13	14
44	203			210	191	154			125		
43	204	150	127	211	193	155		132	126	147	
42	205	151	128	212	195	156	149				
41		152	129		197	160	150				
40	206	153	130	213	198	161	152	134	127		
39	208	154	131	214	199	162	154	135			
38	209	155	132	215	200	164	155	136	128		
37	212	156	133	216	202	165	156	138	129	148	152
36	213	158	135	217	203	166	157		130		
35	215	160	136	218	204	171	158	139	133		
34	218	161	137	220	205	172	159	140	135	149	
33	220	162	138	223	206	173	161	142	136		
32	222	164	140	226	209	175	163	143	139		
31	225	165	141	227	210	181	164	145	140	153	
30	227	167	142	230	216	183	166	146	141		
29	230	169	143	235	220	185	168	147			
28	231	171	144	238	223	189	171	148	142		
27	233	172	146	243	225	190	172	149	143	154	
26	236	174	147	244	226	192	173	150	144		
25	238	177	148	246	230	194	174	151	146		
24	242	178	149	248	231	195	178	153	150		
23	243	180	150	261	234	198	179	154	151		
22	244	183	151	264	236	199	180	155	156		
21	246	185	152	265	240	200	183	156			
20	253	187	153	273	242	201	185	159	157	163	153
19	256	189		274	243	204	187	162	161		
18	261	191	154	277	244	208	188	163	162		
17	265	194	157	284	247	214	191	166	166	170	
16	271	195	161	286	254	215	195	171	171		
15	274	197	163	295	258	225	197	172	173		
14	283	198	167	296	264	226	198	174	174		
13	286	200	170	303	268	228	199	175	177		
12	293	204	172	309	272	232	201	177	179		
11	295	208	174	320	284	237	205	178	187	186	
10	296	213	177	321	294	245	213	180	192		
9	303	214	178	323	296	253	214	182	194	195	
8	314	220	181	338	297	254	217	186	202		
7	317	225	187	372	303	260	220	188	204		167
6	326	243	195	384	315	271	224	193	210	206	
5	348	254	202	408	326	277	228	205	220		
4	373	264	206	439	354	284	247	213	234		
3	400	283	214	448	364	289	265	217	250	278	
2	412	313	234	480	400	295	292	254	270		
1	448	403	280	500	412	313	324	263	288	303	
N	405	392	329	122	238	203	183	185	138	35	7
Mean	210.714	159.168	128.687	226.090	200.466	168.025	156.907	133.622	130.152	142.000	138.286
SD	69.237	58.220	39.458	80.961	63.710	64.112	52.049	40.564	46.082	49.208	22.051
SE	3.440	2.941	2.175	7.330	4.130	4.500	3.848	2.982	3.923	8.318	8.334
Range	97-513	76-696	65322	122-513	107-439	76-696	85-505	65-351	66-322	87-303	110-167
Sk	1.523	3.759	1.537	1.675	1.400	3.394	2.952	1.757	1.509	1.594	-0.207
K	2.945	24.201	3.865	2.845	2.077	22.483	14.337	5.602	2.935	3.289	-1.846
Mdn	196.333	146.100	120.800	205.500	185.000	150.188	144.333	127.750	120.750	142.000	148.000
Mo	206.000	129.000	112.000	174.000	170.000	150.000	149.000	112.000	127.000	154.000	110.000

TABLE 59

Percentile Norms and Other Normative Data
for Zig Zag Run (sec) for Boys

Percentile	Grade Level			Age in Years							
	Second	Fourth	Sixth	7	8	9	10	11	12	13	14
99	24.0	22.4	21.6	23.0	24.3	22.2	23.0	21.9	21.6	21.8	23.0
98	24.8	22.8	21.7	24.1	24.9	23.1	23.1	22.0	21.7		
97	24.9	23.1	21.9	24.7	25.0	23.6	23.3	22.4	22.0		
96	25.0	23.4	22.3	24.9	25.1		23.5	22.5	22.4	22.0	
95	25.1	23.6	22.5		25.2	23.9	23.6	22.6	22.5		
94	25.3	23.8	22.6	25.0	25.3	24.1	23.7	22.7	22.6		
93	25.4	23.9	22.7	25.6		24.3	23.9	22.8	22.7		
92	25.5	24.0	28.8	26.0	25.4	24.4			22.9	22.4	
91	25.6	24.1			25.5	24.6	24.0	22.9			
90	25.7	24.2	22.9	26.1		24.7	24.1				
89	25.9	24.3		26.2	25.6	24.8	24.2	23.0		22.5	
88		24.4		26.5	25.9			23.1			
87	26.0					24.9					
86	26.3	24.5			26.0		24.3	23.2			23.1
85	26.5	24.7		26.6	26.4		24.4			22.8	
84			23.0	24.7	26.5		24.5	23.3	23.0		
83	26.6	24.8		26.8	26.6	25.0	24.6	23.4		23.0	
82	26.7		23.1		26.7	25.2	24.7	23.5	23.1		
81	26.8	24.9		26.9	26.8			23.6	23.2		
80	26.9		23.2		26.9	25.4	24.8				
79				27.0	27.0					23.1	23.2
78			23.3			25.5	24.9	23.7	23.3		
77	27.0					25.6		23.8	23.4	23.2	
76	27.1		23.4	27.1	27.1						
75		25.0		27.4				23.9		23.4	
74	27.2	25.1	23.5		27.2	25.7		24.0	23.5		
73	27.3	25.2	23.6	27.5	27.3				23.6		
72	27.4	25.3			27.4	25.8	25.0	24.1	23.7		
71		25.4			27.5		25.1	24.2	23.8		23.3
70	27.5	25.5	23.7	27.7	27.6	25.9	25.2		23.9	23.5	
69	27.6		23.8				25.3				
68			23.9	27.8			25.4			23.6	
67	27.7	25.6		27.9	27.7		25.5				
66	27.8	25.7		28.0	27.8	26.0		24.3		23.7	
65	27.9			28.1	27.9			24.4			
64				28.2		26.1	25.6	24.5	24.0		
63		25.8	24.0	28.4			25.7	24.6	24.1		
62	28.0	25.9						24.7	24.2		
61						26.2	25.8	24.8			
60	28.1		24.1		28.0	26.3	25.9	24.9		23.8	
59	28.3	26.0	24.2	28.5	28.1	26.4					
58	28.4				28.2				24.3		
57	28.5	26.1		28.6		26.5	26.0			24.0	24.0
56	28.6				28.3	26.6			24.4		
55	28.7	26.2	24.3	28.7	28.6	26.7	26.1	25.0			
54			24.4	28.8					24.5		
53	28.8	26.3			28.8	26.8	26.2	25.1		24.3	
52	28.9		24.5	28.9		26.9		25.2	24.6		
51			24.6	29.0	28.9		26.3	25.3	24.7		
50		26.4	24.7			27.0		25.4	24.8	24.8	24.7
49	29.0		24.8						24.9		
48	29.1	26.5	24.9	29.1	29.1	27.1		25.5			
47	29.2			29.2	29.2		26.4	25.6		24.9	
46	29.3	26.6			29.3	27.2		25.7	25.0		
45	29.4	26.7					26.5		25.1		

TABLE 59 (Continued)

Percentile Norms and Other Normative Data
for Zig Zag Run (sec) for Boys

	Grade Level			Age in Years							
%tile	Second	Fourth	Sixth	7	8	9	10	11	12	13	14
44		26.8		29.3	29.4	27.3		25.8			
43			25.0	29.4	29.5	27.4	26.6		25.2		
42	29.5	26.9	25.1		29.9		26.7	25.9	25.3		
41	29.6					27.5	26.8		25.5	25.0	
40	29.7		25.2	29.5							
39	29.8		25.3			27.6	26.9	26.0	25.6		
38	29.9		25.4	29.6				26.1			
37		27.0	25.5	29.7	30.0	27.7					
36		27.1		29.8	30.1	27.9	27.0	26.2		25.2	25.0
35	30.0	27.2	25.6	29.9	30.5		27.1	26.3	25.7		
34	30.4				30.6	28.0	27.2	26.4	25.8	25.6	
33	30.6	27.3	25.7	30.0	30.7	28.1		26.5	25.9		
32	30.7	27.4	25.8	30.1	31.0	28.3	27.3	26.6		25.7	
31	30.8	27.5		30.4	31.1	28.4		26.7			
30	30.9		25.9	30.7	31.2	28.5	27.4	26.8	26.0		
29	31.0	27.6		30.8		28.7	27.6	26.9	26.1		26.0
28	31.1	27.7				28.8	27.9		26.3	26.0	
27	31.2	27.9	26.0	30.9	31.4	28.9			26.4		
26	31.3		26.1	31.0					26.5		
25	31.4		26.3	31.1					26.6		
24	31.5	28.0	26.4	31.2	31.6	29.0		27.0	26.7		
23		28.2	26.5		31.9		28.0	27.1		26.1	
22	31.6	28.4	26.6			29.2	28.1	27.2	26.8		
21	31.8	28.6	26.8	31.4		29.4	28.4	27.3	26.9		26.1
20	31.9	28.8	26.9		32.0	29.5	28.6	27.5	27.0		
19	32.0	28.9			32.4	29.6	28.9	27.6	27.2	26.9	
18	32.4			31.6	32.8	29.7		27.8	27.4		
17	32.7	29.0	27.0	32.0	33.0	29.8	29.0		27.5	27.0	
16	32.8	29.1	27.2	32.1	33.1	29.9	29.2	27.9	27.6		
15	33.0	29.2	27.5	32.2	33.4	30.2		28.0		27.2	
14	33.1	29.3		32.5	34.0	30.8	29.3	28.1	27.8		26.8
13	33.3	29.4	27.6	32.6	34.2		29.4	28.3	27.9	27.9	
12	33.9	29.6	27.8	32.7	34.7	30.9	29.6	28.4	28.0		
11	34.2	29.7	27.9	33.0	34.8	31.0	29.8	28.8	28.1	28.0	
10	34.8	29.8	28.0	33.3	34.9	31.1	29.9	29.0	28.2		
9	34.9	30.1	28.1	34.5	35.0	31.8		29.1	28.5	28.5	
8	35.0	30.2	28.2	35.2	35.2	32.7	30.0	29.3	28.7		
7	35.2	30.8	28.5	35.3	35.6	32.9	30.7	30.0	28.8	28.8	27.6
6	35.7	30.9	28.8	35.5	35.7	33.0	30.8	30.2	28.9		
5	35.9	31.0	28.9	35.8	37.1	33.1	31.0	30.7	29.0		
4	37.1	31.7	29.0	36.0	38.0	33.8	31.2	31.0	29.1	28.9	
3	38.4	32.5	30.0	36.1	39.5	34.0	32.4	31.7	29.6		
2	39.7	32.9	30.8	36.8	41.1	35.0	32.5	32.7	30.8		
1	42.6	34.0	32.0	38.4	42.6	39.0	35.0	33.0	31.4	29.0	
N	408	437	321	110	236	202	224	170	147	47	14
Mean	29.769	26.877	25.147	29.516	29.847	27.639	26.854	25.838	25.277	24.957	24.964
SD	3.834	2.471	2.156	3.192	3.933	3.031	2.937	2.537	2.192	2.092	1.670
SE	0.190	0.118	0.120	0.293	0.256	0.213	0.196	0.195	0.181	0.305	0.446
Range	22.8	20.6	21.0	23-43.2	22.8	20.6	22.8	21.8	21-32	21.6	22.9
	-54.0	-41.0	-33.2		-51.4	-42.1	-54.0	-36.0		-29.3	-27.8
Sk	1.862	1.272	0.994	1.128	1.578	1.478	3.958	1.109	0.741	0.502	0.437
K	6.708	3.578	1.137	2.410	4.283	3.915	32.139	1.570	0.200	-0.615	-1.067
Mdn	29.020	26.446	24.720	29.087	28.983	27.030	26.372	25.417	24.971	24.800	24.750
Mo	29.500	25.000	23.000	26.600	30.000	26.000	25.000	25.000	23.000	25.000	24.000

TABLE 60

Percentile Norms and Other Normative Data
for Zig Zag Run (sec) for Girls

Percentile	Grade Level			Age in Years							
	Second	Fourth	Sixth	7	8	9	10	11	12	13	14
99	25.1	23.5	22.8	25.5	25.0	24.0	23.8	22.3	23.0	24.8	
98	25.7	24.0	23.1	26.0	25.4	24.4	23.9	23.0	23.3		
97	25.9	24.2	23.4	26.1	25.9	24.5	24.1	23.2	23.4		
96	26.0	24.3	23.7	26.5	26.0	25.1	24.3	23.6	23.1		
95	26.5	24.4	23.8	26.6	26.1	25.3	24.4	23.7	23.8		
94	26.7	24.5	23.9	26.9	26.5	25.5		23.8	23.9		
93	26.9	24.6	24.0	27.0	26.7	25.6	24.5	23.9	24.0		24.2
92	27.0	24.8	24.1		26.9	25.7	24.6		24.1		
91	27.2	25.0	24.2	27.8	27.0	25.8	24.7	24.0	24.2		
90	23.7	25.1			27.1	26.0	24.8			25.0	
89	27.5	25.3	24.3	27.9				24.2	24.3		
88	27.6	25.4	24.4		27.2	26.1	24.9	24.3			
87	27.7	25.5	24.5		27.3	26.2	25.0	24.4	24.4		
86	27.8	25.6	24.6	28.0	27.4	26.3		24.5			
85	27.9	25.7	24.7	28.1	27.5	26.4	25.3	24.6	24.6		
84	28.0	25.8			27.6	26.5	25.4				
83			24.8	28.2	27.7	26.6	25.5	24.7	24.7	25.3	
82	28.1				27.8	26.7	25.6		24.8		
81	28.2	25.9			27.9		25.7				
80	28.3	26.0	24.9	28.4		26.8	25.8	24.9			
79		26.1		28.5	28.0	26.9	25.9				25.2
78	28.4	26.2			28.1			25.0	24.9		
77	28.5	26.3			28.2						
76		26.4		28.6	28.3			25.1			
75	28.6		25.0	28.7	28.4		26.0				
74	28.7	26.5		28.8			26.1			25.8	
73			25.1	28.9	28.5	27.0		25.2			
72	28.8	26.6			28.6	27.1	26.2				
71	28.9	26.7			28.7	27.2		25.3	25.0	26.0	
70		26.8	25.2			27.6	26.3	25.4			
69	29.0		25.3	29.0	28.8	27.7	26.4	25.5	25.1		
68	29.1	26.9	25.4	29.2	28.9	27.8					
67	29.2		25.5	29.5				25.6	25.2		
66	29.4		25.6	29.6	29.0	27.9	26.5	25.7	25.3	26.4	
65	29.5			29.7	29.1				25.4		
64		27.0	26.7	29.8	29.2				25.5		26.5
63	29.6	27.1		29.9	29.3	28.0	26.6		25.6	26.5	
62	29.7	27.2		30.0	29.4	28.1	26.7	25.8	25.7		
61		27.4	25.8		29.5		26.8	25.9			
60	29.8	27.5	25.9	30.1	29.6	28.2			25.8	26.7	
59	29.9	27.6		30.2	29.7		26.9		25.9		
58		27.7		30.3		28.3	27.0	26.0			
57		27.8		30.4		28.4	27.1	26.1		26.9	
56	30.0		26.0	30.5	29.8		27.2				
55	30.1	27.9	26.1	30.6	29.9	28.5	27.3	26.2	26.0		
54	30.2						27.5		26.1		
53	30.3	28.0	26.2	30.7	30.0	28.6	27.6	26.3	26.2		
52	30.5		26.3	30.8	30.1	28.7	27.7		26.3		
51	30.6				30.2	28.8	27.8	26.4	26.4		
50	30.7	28.1	26.4	30.9	30.3	28.9	27.9	26.6	26.5	27.0	27.0
49	30.8		26.5		30.4			26.7	26.6		
48		28.2	26.6	31.0	30.5	29.0		26.8			
47	30.9	28.3	26.7		30.6			26.9	26.9		
46		28.4	26.8	31.1		29.1				27.1	
45		28.5			30.7	29.2	28.0				

TABLE 60 (Continued)

Percentile Norms and Other Normative Data
for Zig Zag Run (sec) for Girls

	Grade Level			Age in Years							
%tile	Second	Fourth	Sixth	7	8	9	10	11	12	13	14
44	31.0	28.6	26.9	31.7	30.8	29.3	28.1				
43	31.1	28.7		31.9	30.9	29.4			27.0		
42	31.2	28.8			31.0	29.5	28.2	27.0			
41	31.3	28.9		32.0	31.1	29.7	28.3		27.1		
40	31.5		27.0		31.2	29.9	28.4	27.1		27.5	
39	31.6						28.5	27.3			
38	31.7		27.1	32.1	31.3		28.6		27.4		
37	31.8	29.0	27.2	32.2	31.4		28.8		27.5	27.9	28.0
36	31.9	29.1	27.3	32.3	31.5		28.9	27.4	27.8		
35		29.2	27.4	32.5	31.6	30.0		27.5			
34	32.0	29.3	27.5		31.8			27.6		28.0	
33		29.4	27.6	32.8	31.9	30.1		27.8	27.9		
32	32.1	29.6	27.8	32.9		30.2		27.9			
31	32.3	29.8	27.9	33.0	32.0	30.3	29.0	28.0			
30	32.6	29.9	27.9	33.1	32.1	30.5	29.1	28.1			
29	32.7			33.2	32.4	30.6	29.2	28.3		28.1	
28	32.8			33.3	32.8	30.7	29.4	28.4	28.0		
27	32.9	30.0	28.0		32.9	30.8	29.6		28.2		
26	33.0	30.1	28.1			30.9	29.8	28.5	28.4	28.3	
25	33.1		28.2	33.5			29.9	28.8	28.5		
24	33.2	30.2	28.3	33.6	33.0	31.0			28.6		
23	33.3	30.3	28.4	33.9	33.1	31.3		28.9		28.6	
22	33.5	30.5	28.5	34.0	33.3	31.4	30.0	29.0			
21	33.6	30.6	28.6	34.3	33.4	31.5	30.1	29.2	29.0		
20	33.9	30.8	28.7		33.6	31.6	30.2	29.3	29.1	28.7	
19	34.0	30.9		34.4	33.8	31.7	30.3	29.6			
18	34.2	31.0	29.0	34.5	34.0	31.8	30.4	29.7			
17	34.3	31.1	29.1	34.6	34.2	31.9	30.5	29.8	29.3	29.0	
16	34.4	31.2	29.2	34.7	34.4		30.8	29.9	29.4		
15	46.6	31.3	29.4	35.0	34.5		30.0		29.7		
14	34.8	31.5	29.5	35.2	35.0	32.0	31.0	30.0	29.9	29.2	
13	35.1	31.6	29.6	35.4	35.5	32.1	31.2	30.1			
12	35.5	31.9	29.7	35.7	35.7	32.2	31.3	30.4			
11	35.8		29.8	35.9	36.0	32.3	31.5	30.9		29.3	
10	36.1	32.0	29.9	36.0	36.2	32.6	31.6	31.0	30.0		
9	36.3	32.1	30.0	36.4	36.4	33.1		31.1	30.2	29.8	
8	36.8	32.2	30.5	36.8	37.4	33.4		31.3	30.6		
7	37.7	33.0	30.7	38.0	37.8	33.9	32.0	31.6	30.7		37.0
6	38.0	33.3	30.9	38.4	38.0	34.0	32.8	31.7	30.8	30.0	
5	38.4	33.3	30.9	38.8	38.3	34.4	33.1	32.0			
4	38.9	34.0	31.3	39.7	38.7	34.9	33.7	32.3	31.0		
3	39.7	34.9	32.0	40.7	39.3	35.0	34.1	33.4	31.7		
2	42.1	35.3	32.3	32.3	43.5	40.3	35.3	35.0	34.0	32.0	
1	44.2	37.1	33.5	45.9	44.2	36.3	37.8	35.0	33.0	30.8	
N	387	392	329	115	235	203	183	185	138	35	7
Mean	31.315	28.538	26.894	31.761	31.105	29.250	28.140	27.159	26.943	27.320	28.086
SD	3.840	2.844	2.346	4.019	3.924	2.782	2.845	2.744	2.345	1.373	4.222
SE	0.195	0.144	0.129	0.375	0.256	0.195	0.210	0.202	0.200	0.294	1.59
Range	20-49	23.3 - 39.1	21.9 - 37	25.3 - 47.3	20 - 49	23.3 - 38.9	23.5 - 39.1	21.9 - 38.0	22.9 - 33.5	24.8 - 31.0	24.2 - 37.0
Sk	1.272	0.791	0.843	1.356	1.236	0.581	1.040	0.999	0.540	0.347	1.924
K	2.928	0.864	0.950	2.683	2.842	0.268	1.758	1.256	-0.457	-0.646	4.319
Mdn	30.740	28.172	26.442	30.994	33.333	28.925	27.912	26.575	26.500	27.033	27.000
Mo	32.000	27.000	27.000	31.761	28.000	27.000	29.000	27.000	25.000	24.800	24.200

TABLE 61

Percentile Norms and Other Normative Data
for 600 Yard Walk-Run (sec) for Boys

%ile	Grade Level			Age in Years							
	Second	Fourth	Sixth	7	8	9	10	11	12	13	14
99	143	134	116	148	143	137	135	121	119	115	118
98	146	136	118	149	145			122	120		
97	147	137	119		147		137	124	121		
96	148	138	120	150	148	140	138	127			
95	149	139	121	156	149	141	142	128	122		
94	150	140	122	157	150	142		129	123	119	
93	151	141	123	158	152	144		131	124		
92	153	142	124	159	153	145	143		126	120	
91	155	143	127	160	154	146		132	127		
90	156		128	161	156	147	144	133	128	121	
89	157	144	129	162	157		145	134	129		
88		145			158	148		135	130		
87	158	146	130	163	159		146	136	131	122	
86	159		131		160			137	132		
85	160	147		164	161	149	147				119
84	161	148	132				148	138	133		
83				165	162	150				129	
82	162		133	166	163				134		
81	163	149		168		151	149	139	135	130	
80	164		134		163	152	150	140	136		
79		150	135	169	165	153		141		131	122
78			136	170	166	154	151	142			
77		151		172	167	155			137		
76	165						152	143			
75	166	152	137		168		153	144		134	
74	167			173	169		154		138		
73	168	153	138			156	155	145			
72	169	154			170		156	146	139		
71	170	155	139	174	171		157	147	140	135	
70	171		140								
69		156		175		157					
68			141	176			157		141		
67	172	157			172	158	159	148		136	
66			142	177	173	159			142		
65	173	158	143		174	160	160	149	143		
64		159			175		161	150			127
63	174	160	144				162				
62	175				176	161	164	151	144	137	
61		161	145	178	178						
60	176	162	147	179		162		152	145	139	
59	177	163	148	180	179				146		
58					180		165	153	147	142	
57	178	164		181	182	163	166		148		
56	179			182	183		167			143	
55	180	165	149	183	184	164		154			
54	181		150	184	185	166	168	155	149		
53	182	167		185	186	167					
52	183	168	151			168	169	156	150	146	
51	184		153			169	170		151		
50	185	169		186	187		171	157	153	148	129
49				187	188		172				
48	186	170	154	188	189			158	154	151	
47	187	171				170	174	159			
46		172	155	189	190	171		160	155	154	
45	188	173	156	190		172	175	161	156		

TABLE 61 (Continued)

Percentile Norms and Other Normative Data
for 600 Yard Walk-Run (sec) for Boys

%tile	Grade Level			Age in Years							
	Second	Fourth	Sixth	7	8	9	10	11	12	13	14
44	189	174	157	192	191	173	177			155	
43	190	175		194	192	174	178		157		
42	191	176	158	195	193	175		162		159	
41	192	177	160	196	195	176	179	163	158		
40	194	178		197	196	177	180	164	160	162	
39	195	179	161	199		178			161		
38	196	180	162	200	197	179	181	165			133
37	197	181		201	200	180		166	162	163	
36	199	182		202	201	181	182		163		
35	200		163	203	202	182	183	167	164	166	
34	201	183	164	205		183	187		166		
33	202	184	165	206	203	184	188	168	168	169	
32	203	185	166	207			190	171	170		
31	204	188	167	208	204	185	191	172	172		140
30	205	189	169	209	205	187	192	173	173		
29	206	190	171		206	188		174	174	172	
28	207	191	173	210	207	189	193	175	175		
27	208	192	174	211	208	190	195	178	176	179	
26	209	193	175	212	209	191	196	179	177		
25	210	194	177	213	211	192		181	179	185	
24	212	195	178	214	212	193	197	182	180		
23	214	196	179	215	213		199	183	184	186	154
22		197	181	216	215	194	201	184	187		
21	215	198	184	217	217	196	202	185	189	189	
20	216	200	185	219	219	197	203	188	191		
19	219	201	187	221	221	198	204	191	192	192	
18	220	203	189	222	199	205	192	195			
17	221	205	192	223	224	200	209	194	196	210	
16	223	208	194	226	225	203	210	198	197		
15	223	210	197	227	227	210	214	203	201	222	164
14	227	213	199	230	229	213	219	205	202		
13	229	216	203	232	231	215	220	206	203		
12	230	220	205	235	232	216	222	208	204	227	
11	232	222	207	239	235	219	230	213	206		
10	235	224	210	240	236	221	231	215	215	239	
9	239	228	217	242	239	222	238	217	218		
8	242	231	219	244	245	223	244	220	220	244	
7	246	235	222	246	249	225	249	223	223		198
6	250	243	225	248	251	228	253	226	224	252	
5	252	249	231	250	257	238	257	231	235		
4	259	254	236	252	264	240	259	234	237	255	
3	268	259	252	265	268	245	265	236	270		
2	277	265	264	268	284	264	275	250	275		
1	312	277	275	277	320	286	282	265	319	263	
N	416	454	332	119	234	209	232	177	155	48	13
Mean	192.892	177.894	162.557	195.109	193.962	177.952	181.026	166.282	164.084	164.875	142.69
SD	37.570	32.951	35.845	30.691	36.179	33.514	38.278	32.049	38.077	43.135	30.05
SE	1.842	1.546	1.967	2.813	2.365	2.318	2.513	2.409	3.058	6.226	8.33
Range	140-448	124-293	111-329	148-297	140-421	137-408	128-448	120-291	116-329	111-269	118-20
Sk	2.251	1.546	1.537	0.825	1.768	2.332	2.178	1.267	1.709	1.079	1.37
K	10.130	0.933	2.922	0.325	6.710	10.587	9.723	1.661	3.685	0.123	0.8
Mdn	185.625	169.346	153.750	187.750	187.750	169.286	171.750	157.625	153.000	148.500	129.2
Mo	164.000	149.000	139.000	178.000	172.000	157.000	165.000	148.000	137.000	119.000	119.0

TABLE 62

Percentile Norms and Other Normative Data
for 600 Yard Walk-Run (sec) for Girls

	Grade Level			Age in Years							
Title	Second	Fourth	Sixth	7	8	9	10	11	12	13	14
99	152	140	124	156	148	148	138	121	135	126	
98	157	145	130	163	158	150	140	128	137		
97	160	148	132	166	160	153	141	130	138		
96	163	150	137	167	161	157	146	132	139		
95	164	152	138	168	164	158	148	138	141	132	
94	166	153	141	169	166	159	149	140	144		
93	168	154	142	170	167	160	151	143	146		164
92	169	156	143	171	168	162	152		147		
91	170	158	144	172	169	164	153		149	142	
90	171	159	145	173	171	165	154	144	150		
89	172	161	146	174	172	166	155	145	152		
88	173	162	148	175	174	167	156	147		143	
87	174	164	149	176			158	148	153		
86		165	151		175	169	159	149	154		
85	175	166	152	177		170	162	150		146	
84	176	167	154	178	176	171	163	152	155		
83	178	168	155	180	177		165	155	156		
82	179	169	156	184	178	172	166	157	157	156	
81	180		157		180	173	167	158	158		
80	181	170	158		181		168	159	159		
79	182	171	159	185	182	174	169		160	159	171
78	183	172	160	186	183	175		160	162		
77	184	173	161	187	184	176	170	161			
76	185	174	162	188	185			162	163	163	
75	186				186	177	171	163	164		
74	187	175	163	189	187	178	172	164	165		
73		176	164	190		179	173	165		164	
72	188	177	165	191	188		174	166	167		
71	189	178	166	192	189	180	175	167	168		
70	190		167		190	181		168		165	
69	191	179	168	193	191	182	176	169	169		
68									170		
67	192	180	169	194	192	183	179	170	171	170	
66	193		170		193	185	180	171	172		
65		181	171		194	186					
64	194	182				187		172	173	174	193
63			172	195		188		173	174		
62	195	183	173		195						
61	196	184			196		181	174	175	178	
60	197	185	174	197	197	189	182	175	176		
59		187	175	198	198	190			177		
58	198	188	176	199	199	191	183	176	178	181	
57	199		177				184		179		
56				200	200	192	185	177	180		
55	200	189	178		201	193	186		181		
54	201	190	179				187		182	184	
53			180	201	202	194	188	178	184		
52	202	191	181			195		179			
51		192	182		203	196	189	180	185		
50	203	193	183	203	204	197	190	182	186	187	194
49	204	184						183	187		
48		194			205	198	191				
47	205		185	204	206	199	192	184	188		
46		195	186		207	200	193	185	189		
45	206	196		205	208	201		186	190	188	

TABLE 62 (Continued)

Percentile Norms and Other Normative Data
for 600 Yard Walk-Run (sec) for Girls

	Grade Level			Age in Years							
%tile	Second	Fourth	Sixth	7	8	9	10	11	12	13	14
44	207	197	187		209	202	194				
43	208		188	206	211	203		187			
42	209	198		207		204				192	
41	210	199	189		212	205	195	188	191		
40	211	200	190	209	213	206	196	189	192		
39	212	201	210	214	207	197	190	194			
38	213	202	191	211	215	208	198		196		
37	214	204		212	216	209	199	191	197		195
36	215	205	192	213	217	210			198	193	
35	216			216	218	211	200		200		
34	217	206	193		219	212	201	192	203		
33	218	207	194	217		213		193	204	194	
32	219	208	195	218		214	202	194	205		
31		209	196	219	220	215		195	207		
30		211	197	220			206	197		197	
29	220	212	198	221		216	207	198	208		
28	221	213	200		221	217	208		209		
27	222	214	201	222	222	218	209	199	212	199	
26	223	215	202	223	223	219	210	220	213		
25	224		203	224	225		211	202	214		
24	225	216	204	225	226	221	214	203	216	200	
23		217	206	226	227	222	215	204	218		
22	226	220	207		228	223	216	205	219		
21	227	221	209	227	229		217	206	220		
20	228	222	211		230	224	220	207	224		219
19	229	223	213	228	231	225	221	209			
18	231	225	214	230	232	226	223	210		203	
17	232	226	217	233	233	228	225	211	225		
16	234	228	218	235	234	229	226	213	226		
15	235	230	219	237	235	230	227	214		216	
14	237	232	220		236	232	229	215	227		
13	239	233	221		240	233	232	217	228		
12	240	235	224	239	242	234	234	218	229	217	
11	242	238	225	240	244	240	236	219	230		
10	246	241	227	243	246	243	239	220	231		
9	248	244	228	245	248	244	240	221	237	249	
8	250	245	230	250	250	245	244	222	238		
7	254	247	234	254	253	246	245	228	243		275
6	259	256	242	2[illegible]	259	256	249	231	250	271	
5	262	260	249	260	265	260	262	234	262		
4	268	270	266	265	270	268	263	243	266		
3	273	277	274	266	272	288	272	247	278	287	
2	287	292	278	286	277	296	277	270	287		
1	294	315	293	297	289	315	290	297	294	294	
N	386	409	333	114	232	216	186	191	140	33	7
Mean	207.166	198.782	186.538	208.395	207.694	202.500	194.769	185.408	191.543	189.515	201.571
SD	29.777	36.344	35.080	29.678	29.815	35.163	33.664	36.987	35.946	39.999	37.004
SE	1.516	1.797	1.922	2.780	1.957	2.393	2.468	2.676	3.038	6.963	13.986
Range	147-311	137-416	115-373	154-306	147-311	142-397	137-345	115-416	133-298	126-294	164-275
Sk	0.687	1.669	1.136	0.910	0.601	0.610	1.007	2.154	35.346	1.041	1.466
K	0.611	5.847	2.811	1.124	0.391	5.303	1.841	10.435	3.038	1.282	2.575
Mdn	203.833	193.143	183.625	203.500	204.700	197.333	190.167	182.000	186.500	187.250	194.000
Mo	195.000	189.000	191.000	185.000	220.000	189.000	181.000	192.000	191.000	187.000	164.000

TABLE 63

Percentile Norms and Other Normative Data
for Self Concept * for Boys

	Grade Level			Age in Years							
% tile	Second	Fourth	Sixth	7	8	9	10	11	12	13	14
99	75	76	78	73	76	78	76	78	76	72	72
98		75	75	72	75	77	75	76	75	71	
97	74	74			74	76	74	75			
96	73	73	74			75	73	74	74		
95		72	73			74	72	73	73		
94	72				73	73			72	70	
93			72	71	72	72	71	72			68
92	71	71					70	71	71	69	
91		70	71						70		
90	70					71		70		68	
89			70	70	71	70			69		
88		69			70		69			67	
87			69					69			
86		68				69			68		66
85	69			69							
84					69	68	68				
83	68		68	68				68	67	66	
82		67									
81	67			67	68		67				
80						67			66		
79	66	66	67	66	67			67		64	62
78					66		66				
77				65		66			65		
76	65		66					66	64		
75		65					65			63	
74				64	65	65			63		
73		64	65	63			64				
72	64							65	62		
71			64			64				62	61
70	63	63			64		63				
69									61		
68			63		63	63		64			
67	62									61	
66		62		61			62				
65	61				62	63		63	60		
64		61					61				60
63					61	61		62		60	
62	60	60	61	60			60				
61					60	60			59		
60										59	
59								61			
58	59	59	60		59	59				58	
57							59		58		
56				59						57	
55		58						60			
54			59		58	58	58			56	
53									57		
52		57					57				
51			58	58				59	56	55	
50		56				57	56				54
49	57				57						
48				57				58		54	
47		55	57			56					
46	56				56	55	55		55		
45			56					57			

TABLE 63 (Continued)

Percentile Norms and Other Normative Data
for Self Concept * for Boys

	Grade Level			Age in Years							
%tile	Second	Fourth	Sixth	7	8	9	10	11	12	13	14
44	55	54		56	55		54		54	53	53
43								56			
42					54	54					
41	54	53	55				53				
40								55	53	52	
39				55							
38		52			53	53	52				
37	53		54					54	52		52
36				54		52					
35		51			52					50	
34	52		53	53		51	51		51		
33								53		49	
32			52		51				50		
31	51	50						52		48	
30				52		50	50				
29	50	49	51		50		49	51			40
28						49				47	
27	49		50	51	49				48		
26		48			48			50		46	
25						48	48				
24	48	47	49	50					47		
23		46			47	47	47	49			
22						46	46		46		
21	47		48	49							28
20		45			46		45	48			
19	46	44	47			45			45	45	
18				48	45		44	47			
17	45		46			44				39	
16		43		47	44		43	46	44	38	
15	44		45							37	
14		42		46			42			36	25
13	43		44	45	43	43	41	45	43	35	
12		41	43	44			40	44	42		
11	42	40	42	42	42	42	39	43	41		
10	41	39	40	39	41	41	37	42	40	34	
9	39	37	39	38	40	40	36	41	39	33	
8	37	36	38	37	38	39	35	40	38	32	
7	36	35	37	36	37	37	33	39	37	31	23
6	35	34	36	34	36	35	31	38	36	30	
5	34	32	36	32	35	34	29	37	34		
4	32	31	32	31	33	33	28	36	32	29	
3	29	29	30	30	31	30	26	34	31		
2	24	26	26	29	24	27	22	33	26	21	
1	22	22	23	24	22	20	21	28	23		
N	431	502	340	123	253	230	250	192	162	48	14
Mean	56.343	55.586	57.006	56.820	56.482	56.300	55.500	57.755	55.685	53.917	51.714
SD	11.822	12.222	11.740	11.085	12.059	12.106	12.640	10.995	11.516	12.537	16.302
SE	0.569	0.545	0.637	1.004	0.758	0.798	0.799	0.793	0.905	1.810	4.357
Range	77-18	79-15	79-21	75-24	77-18	79-17	77-15	79-26	78-23	72-21	72-23
Sk	-0.629	-0.556	-0.618	-0.745	-0.575	-0.520	-0.677	-0.458	-0.429	-0.689	-0.809
K	0.213	-0.030	0.147	0.336	0.080	0.103	0.121	-0.211	-0.077	-0.124	-0.664
Mdn	57.684	56.591	58.250	58.000	57.769	57.500	56.667	59.000	56.375	55.000	54.500
Mo	58.000	63.000	60.000	60.000	58.000	44.000	52.000	61.000	56.000	46.000	60.000

* 80 Maximum score for Piers Harris Self Concept Scale

TABLE 64

Percentile Norms and Other Normative Data
for Self Concept * for Girls

Percentile	Grade Level			Age in Years							
	Second	Fourth	Sixth	7	8	9	10	11	12	13	14
99	77	78	77	77	77	79	77	77	77	77	80
98	76	76	76	75	76	77	76	76	76		
97	75	75	75	74	75	76	75	75	73	76	
96			73			75			72		
95	74	74	72			74	74	74	71		
94	73		71	73	74			73		73	
93	72	73		72	73	73	73	72	70		
92			70		72	72	72	71			
91	71	72		71	71		71			70	
90		71				71		70	69		
89	70		69		70	70	70			69	
88		70		70		69		69			
87		69									58
86				69		68	69	68			
85	69	68	68						68		
84					69	67	68	67			
83				68							
82	68	67	67								
81				67	68			66	67		
80						66				68	
79	67	66	66				67		66		
78						65					
77					67			65		67	
76		65	65				66		65		
75	66				66						
74				66		64		64		65	
73		64					65				
72	65		64		65			63	64		
71				65		63					57
70		63	63				64				
69								62	63	64	
68							63				
67	64	62	62		64	62					
66							62		62	63	
65	63			64	63			61			
64		61		63							
63			61			61	61	60		60	
62				62					61		
61	62		60					59			
60		60				60	60		60	59	
59			59		62			58			
58	61	59		61		59					
57							59		59		
56				60	61			57			
55			58				58				
54	60	58		59		58				58	
53								56	58		
52			57				57				
51		57		58	60					54	56
50	59		56			57		55			
49		56					56		57	53	
48	58				59				56		
47			55	57		56					
46									55		
45	57	55					55	54			

TABLE 64 (Continued)

Percentile Norms and Other Normative Data
for Self Concept * for Girls

	Grade Level			Age in Years							
%tile	Second	Fourth	Sixth	7	8	9	10	11	12	13	14
44					58						
43			54			55				52	49
42		54			57			53			
41	56			56		54			54		
40			53	55			54			51	
39				54	56				53		
38	55	53									
37	54					53	53	52		50	
36		52	52	53	55			51	52		
35				52		52	52				
34	53			51	54						
33		51	51			51		50			
32	52					50	51		51		
31		50			53					48	
30	51		50	50		49		49	50		
29		49			52				49		48
28	50		49				50	48	48		
27				49	51	48	49	47			
26	49	48	48	48		47				46	
25	48	47			50			46	47		
24			47				48				
23							47		46	45	
22	47	46	46		49	46	46	45			
21					48	45		44			
20		45		47			45	43	45	44	
19	46		45		47	44	44		44		
18		44	44	46			43		43		
17	45	43	43		46	43	42	42		43	
16							41				
15	44	42	42	45			38	41	42		
14		41			45	42	37	40	41	42	42
13	43	40	41		44	41	36	39	40		
12		39	40	44	43		35		39		
11	42	38	39		42			38	38	40	
10	41	36	38	43	41	40	34	37	37		
9	40	35	37		40	39		35	36	39	
8		34	35		39	38		34	35		
7	39		34	42	38	36	33	33	34		
6	38	33	33	40	37	34	31	32	33	37	
5	36	32	32	39	36	33	28	31	32		
4	34	30	31	38	35	32	26	29	30		
3	32	27	29	37	32	30	24	28	27	29	
2	30	25	27	33	30	28	23	27	25		
1	25	23	24	31	21	25	20	25	21		
N	407	461	352	124	245	242	212	204	149	35	7
Mean	57.435	55.751	55.682	57.774	58.020	56.091	55.538	55.010	55.544	55.914	52.857
SD	11.740	12.804	12.140	10.790	11.719	12.118	13.550	12.546	12.389	12.200	6.594
SE	0.582	0.596	0.647	0.969	0.749	0.775	0.931	0.878	1.015	2.062	2.492
Range	79-12	80-11	78-21	79-31	78-12	80-25	79-11	78-24	78-21	78-29	60-42
Sk	-0.621	-0.539	-0.491	-0.211	-0.807	-0.365	-0.710	-0.378	-0.645	-0.107	-0.691
K	0.153	-0.044	-0.259	-0.797	0.772	-0.337	0.091	-0.438	-0.127	-0.773	-0.865
Mdn	59.313	56.909	56.625	58.167	60.111	57.500	56.833	55.625	57.750	54.000	56.000
Mo	65.000	56.000	53.000	48.000	63.000	54.000	68.000	53.000	55.000	69.000	42.000

*80 is maximum score for Piers-Harris Self Concept Scale

TABLE 65

Percentile Norms and Other Normative Data
for Reading * for Boys

	Grade Level			Age in Years							
%tile	Second	Fourth	Sixth	7	8	9	10	11	12	13	14
99	25	20	20	25	25	23	20	20	20	20	20
98						21				19	
97											
96						20					
95											
94											
93										18	19
92											
91	24										
90					24						
89											
88											
87				24							
86									19		
85		19								17	18
84											
83			19	23		19					
82	23										
81								19	19		
80											
79											
78					23						
77											17
76										16	
75											
74											
73		18									
72				22			18				
71								18		15	
70	22					18					
69											15
68			18							14	
67									18		
66											
65											
64					22						
63		17						17			
62							17				14
61	21										
60				21							
59			17			17					
58											
57											
56									17	13	
55											
54											
53											
52											
51	20	16		20	21		16		16		12
50						16		16			
49										12	
48											
47			16								
46										11	7
45		15		19							

TABLE 65 (Continued)

Percentile Norms and Other Normative Data
for Reading * for Boys

	Grade Level			Age in Years							
%tile	Second	Fourth	Sixth	7	8	9	10	11	12	13	14
44	19				20		15			10	
43									15		
42											
41			15					15			
40						15					
39									14		6
38			14							9	
37		14			19			14			
36	18						14		13		
35											
34				18						8	
33						14			12		
32	17	13	13							7	
31							13	13			5
30											
29				17	18				11		
28		12									
27			12			13	12			6	
26	16							12			
25					17						
24		11	11	16		12	11				
23	15										
22		10					10		10	5	
21	14		10		16			11	9		
20											
19				15	15	11		10			
18	13	9									
17			9		14	10	9			4	
16	12	8	8				8		8		
15				14	13		7	9			0
14				13		9		8	7		
13			7	12	12	8	6				
12	10	7		11	11		5				
11			6	10					6		
10	9	6		9						3	
9	8			8				7			
8		5	5		10		4		5		
7	7			7		7	3	6		2	
6		4	4		9						
5	6			6	8	6		5	4		
4		3	3		7			4		1	
3	5		2	5	5	5	2	3	3		
2	3	2	1	3	4	3	1		1	0	
1	1	1		1	3	1	0	0			
N	329	434	248	100	188	203	205	157	99	41	13
Mean	18.644	14.615	14.798	18.890	19.511	15.404	14.576	15.000	14.545	11.268	10.615
SD	5.692	5.041	5.223	5.523	5.177	4.578	5.405	4.817	5.286	5.661	7.124
SE	0.314	0.242	0.332	0.552	0.378	0.321	0.378	0.384	0.531	0.884	1.976
Range	25-1	20-0	20-0	25-1	25-3	24-1	20-0	20-0	20-1	20-0	20-0
Sk	-1.140	-0.984	-1.045	-1.294	-1.313	-0.901	-1.036	-1.062	-0.848	-0.302	-0.187
K	0.582	0.048	0.119	1.256	1.104	0.243	0.003	0.466	-0.424	-1.138	-1.473
Mdn	20.386	16.064	16.722	20.125	21.100	16.475	16.333	16.524	16.429	12.667	12.000
Mo	23.000	20.000	20.000	25.000	23.000	19.000	20.000	20.000	19.000	14.000	0.000

* 25 is maximum score for second grade; 20 in fourth and sixth grades for Georgia CRT.

TABLE 66

Percentile Norms and Other Normative Data
for Reading * for Girls

%tile	Grade Level			Age in Years							
	Second	Fourth	Sixth	7	8	9	10	11	12	13	14
99	25	20	20	25	25	25	20	20	20	19	18
98						24					
97						21					
96						20					
95											
94											
93											
92											
91											
90											
89										18	
88											
87											
86											
85										17	
84											
83				24							17
82	24				24						
81		19									
80							19				
79											
78											
77											
76								19			
75			19			19			19		
74										16	
73											
72											
71											
70											
69											
68				23							
67	23										16
66											
65					23		18				
64		18									
63											
62											
61								18			
60											
59										15	
58			18								
57											
56											
55									18		
54											
53											
52											
51	22	17		22		18					
50							17			14	13
49								17			
48			17		22				17		
47											
46											
45			16				16				

TABLE 66 (Continued)

Percentile Norms and Other Normative Data
for Reading * for Girls

%ile	Grade Level			Age in Years							
	Second	Fourth	Sixth	7	8	9	10	11	12	13	14
44				21		17					
43											
42	21										
41								16		13	
40											
39							15				
38		15		20							
37										11	
36	20		16		21	16					
35							14		16		
34											
33								15	15	10	10
32		14									
31	19		15		20						
30						15					
29									14		
28				19	19		13				
27								14			
26			14								
25							12				
24	18	13							13		
23						14					
22				18	18				12	9	
21	17		13								
20		12						13	11		
19	16		12	17	17		11			8	
18	15			16							
17			11		15	13					3
16		11						12	10		
15	14		10	15							
14	13				14			11			
13				14	13	12		10			
12	12				12						
11	11	10		13		11	10			5	
10			9					9	9		
9	10	9	8	11	11	10	9	8			
8		8			10			7	8		
7				10		8				4	
6	9	7	7		9		8	6	6		
5	8		6		8		7				
4	7	6	5		7	7	6	5	5	2	
3	4	5	4	9	4	6	5				
2	3	4	3	4	3	3	4	4	4		
1	2	2	2	3	2	2	3	2	3		
N	306	402	247	100	180	199	184	142	110	7	6
Mean	20.716	15.843	16.154	20.460	20.300	16.789	15.668	16.085	16.100	13.000	12.833
SD	5.409	4.165	4.397	4.877	5.396	4.063	4.225	4.377	4.424	4.756	5.636
SE	0.309	0.208	0.280	0.488	0.402	0.288	0.311	0.367	4.443	0.915	2.301
Range	25-1	20-2	20-0	25-3	25-1	25-2	20-2	20-0	20-3	19-2	18-3
Sk	-1.535	-1.168	-1.371	-1.553	-1.714	-1.200	-1.008	-1.449	-1.188	-0.730	-1.226
K	1.743	0.821	1.205	2.140	2.393	1.834	0.373	1.699	0.416	-0.283	1.054
Mdn	22.258	17.167	17.696	22.045	22.600	18.021	17.000	17.618	17.786	14.125	13.500
Mo	25.000	20.000	20.000	25.000	25.000	20.000	20.000	20.000	20.000	14.000	3.000

* 25 is maximum score for second grade; 20 in fourth and sixth grade for Georgia CRT.

TABLE 67

Percentile Norms and Other Normative Data
for Mathematics * for Boys

	Grade Level			Age in Years							
%ile	Second	Fourth	Sixth	7	8	9	10	11	12	13	14
99	20	20	20	20	20	20	20	20	20	19	19
98										17	
97											
96											
95			19						19	13	
94											
93											
92								19			17
91			18								
90										12	
89								18		11	
88									18	10	
87						19					
86			17	19							
85		19									13
84											
83	19								17		
82			16				19	17			
81									16	9	
80											
79				18							
78					19					8	
77											12
76								16			
75			15						15		
74											
73											
72	18	18	14			18					
71											
70									14		
69							18	15			10
68											
67			13		18						
66										7	
65						17					
64		17	12					14	13		
63									12		
62											9
61											
60	17		11				17	13			
59									11		
58											
57											
56		16								6	
55			10	17							
54							16				
53											
52								12			
51					17	16			10		7
50			9								
49		15					15			5	
48								11			
47									9		
46				16				10			6
45	16		8								

TABLE 67 (Continued)

Percentile Norms and Other Normative Data
for Mathematics * for Boys

	Grade Level			Age in Years							
%tile	Second	Fourth	Sixth	7	8	9	10	11	12	13	14
44						15					
43											
42									8		
41		14						9			
40					16						
39			7				14				5
38	15			15							
37						14					
36									7		
35		13									
34					15					4	
33							13	8			
32			6	14							
31	14					13			6		
30		12									
29							12				
28											
27			5								
26		11		13				7			
25	13				14	12	11		5		
24											
23		10									4
22							10				
21			4			11		6	4		
20		9			13					3	
19							9	5			
18	12			12							
17						10	8				
16		8									
15	11				12		7		3	2	1
14								4			
13			3	11		9					
12		7			11	8	6				
11	10							3			
10		6		10							
9	9						5			1	
8		5	2			7					
7	8			9	10	6			2		0
6	7	4		8	9						
5	6			7	8		4	2			
4	5	3	1	5	6	5					
3					5	4	3				
2	4	2		2	4	3		1	1	0	
1	2	1			1	2	2	0	0		
N	329	434	248	100	188	203	205	157	99	41	13
Mean	15.714	14.394	10.137	15.650	16.277	14.946	14.356	11.484	10.455	6.488	8.308
SD	4.114	5.097	5.689	3.936	3.794	4.467	5.175	5.575	5.814	4.142	5.765
SE	0.227	0.245	0.361	0.399	0.277	0.314	0.361	0.445	0.584	0.647	1.599
Range	20-1	20-0	20-0	20-2	20-1	20-1	20-0	20-0	20-0	19-0	19-0
Sk	-1.259	-0.842	0.154	-1.368	-1.413	-0.961	-0.850	-0.149	-0.095	-0.057	0.467
K	1.265	0.262	-1.169	1.950	2.083	0.225	-0.364	-1.107	-1.243	1.461	-0.470
Mdn	16.924	15.661	9.571	16.944	17.292	16.048	15.750	11.938	10.801	5.667	7.000
Mo	20.000	20.000	5.000	18.000	20.000	19.000	20.000	9.000	3.000	4.000	5.000

* 20 is maximum score for Georgia CRT.

TABLE 68

Percentile Norms and Other Normative Data
for Mathematics * for Girls

	Grade Level			Age in Years							
%tile	Second	Fourth	Sixth	7	8	9	10	11	12	13	14
99	20	20	20	20	20	20	20	20	20	19	8
98											
97											
96								19		14	
95											
94			19								
93									19	13	
92								18			
91											
90											
89										11	
88											
87			18								
86											
85											
84		19		19		19					
83								17			
82	19		17				19		18	9	
81											
80											
79					19						
78									17	8	
77			16								
76								16			
75											
74									16		
73			15								
72							18				
71		18		18							
70								15	15		
69	18										
68			14								
67				17		18					
66					18				14	7	
65											
64											
63											
62			13				17				
61		17						14	13		
60											
59											
58	17		12	16							
57											
56						17			12	6	
55											
54		16					16	13			
53			11								
52											
51											6
50						16					
49			10	15	17			12	11		
48	16	15								5	
47							15				
46											
45			9	14				11	10		

TABLE 68 (Continued)

Percentile Norms and Other Normative Data
for Mathematics * for Girls

	Grade Level			Age in Years							
%tile	Second	Fourth	Sixth	7	8	9	10	11	12	13	14
44										4	
43						15					
42	15										
41		14	8				14	10	9		
40				16							
39											
38						14					
37		13					13	9	8	3	
36											
35	14			13							
34			7		15	13					
33							12				4
32											
31								8			
30		12	6								
29	13								7		
28								7			
27							11				
26					14	12					
25		11							6		
24			5	12					5		
23					13		10				
22	12	10						6			
21						11					
20				11							
19						10			4		
18		9	4	10			9				
17					12						0
16	11								3		
15			3			9	8				
14	10	8						5			
13				9							
12											
11	9				11	8				2	
10		7		8							
9	8				10	7	7				
8				7							
7	7			6	9	6			2	1	
6	6	6	2		8			4			
5				5		5	6	3			
4	5	5			7	4			1		
3	4	4	1		6		5				
2	3	3		1	3	3	4	2	0		
1	2	2	0		2	2	3	1			
N	306	402	247	100	180	199	184	142	110	27	6
Mean	15.435	14.714	10.789	14.780	16.189	15.106	14.674	11.866	11.236	6.370	5.333
SD	4.351	4.719	5.850	4.556	3.902	4.670	4.698	5.162	6.046	4.343	3.011
SE	0.249	0.235	0.235	0.456	0.291	0.331	0.346	0.433	0.576	0.836	1.229
Range	20-1	20-1	20-0	20-1	20-2	20-1	20-2	20-1	20-0	19-1	8-0
Sk	-1.092	-0.729	0.003	-0.912	-1.329	-0.947	-0.623	-0.199	-0.124	1.162	-1.270
K	0.701	-0.471	-1.260	0.461	1.544	0.060	-0.738	-1.179	-1.224	1.356	1.531
Mdn	16.679	15.870	10.792	15.611	17.534	16.464	15.885	12.643	11.643	5.750	6.000
Mo	20.000	20.000	3.000	20.000	20.000	19.000	20.000	15.000	19.000	3.000	6.000

* 20 is maximum score for Georgia CRT.

Table 69

Mean, Standard Deviation and T-Test for Jump and Reach and 600 Yard Walk-Run Scores for Georgia and Minnesota * Elementary School Children

rade	Sex	State	N	Mean	SD	T Value
			Jump and Reach			
econd	Boys	Ga.	435	8.299	2.096	-5.7887 **
		Minn.	153	9.36	1.90	
ourth	Boys	Ga.	433	10.427	2.604	-5.5259 **
		Minn	209	11.46	2.01	
ixth	Boys	Ga.	321	12.891	3.748	-3.0703 **
		Minn.	203	13.75	2.65	
econd	Girls	Ga.	406	7.649	1.860	-7.3096 **
		Minn	139	9.00	1.89	
ourth	Girls	Ga.	392	8.876	2.147	-10.0767 **
		Minn	171	10.75	1.98	
ixth	Girls	Ga.	325	11.374	3.642	-5.6404 **
		Minn	194	12.89	2.47	
			600 Yard Walk-Run			
econd	Boys	Ga.	416	192.892	37.57	-4.1942 **
		Minn.	181	181.000	29.000	
ourth	Boys	Ga.	454	177.894	32.951	-8.040 **
		Minn	239	161.000	22.000	
ixth	Boys	Ga.	232	162.557	35.845	-3.1440 **
		Minn.	206	154.000	27.000	
econd	Girls	Ga.	386	207.166	29.777	-3.1126 **
		Minn	171	199.000	28.000	
ourth	Girls	Ga.	409	198.782	36.344	-6.8901 **
		Minn.	197	181.000	26.000	
ixth	Girls	Ga.	333	186.538	35.080	-7.2992 **
		Minn.	210	167.000	27.000	

* Hanson (4) or Minnesota Curriculum Guide.
* Significant ap p= < .05.

Table 70

Mean, Standard Deviation and T-Test for Sit-Up Scores for Georgia and AAHPERD Elementary School Children

Age	Sex	Test	N	Mean	SD	T Value	
7	Boy	Georgia	120	24.567	8.491	-2.3729	*
		AAHPERD	552	26.7	10.7		
8	Boy	Georgia	248	24.903	8.133	-9.5408	*
		AAHPERD	617	31.1	9.8		
9	Boy	Georgia	203	27.798	8.758	-5.7206	*
		AAHPERD	650	31.9	9.4		
0	Boy	Georgia	222	27.910	8.794	-8.5354	*
		AAHPERD	823	33.9	10.9		
1	Boy	Georgia	169	31.793	9.526	-5.5911	*
		AAHPERD	778	36.4	36.4		
2	Boy	Georgia	148	32.182	9.652	-7.7677	*
		AAHPERD	638	39.3	11.6		
3	Boy	Georgia	48	34.250	8.864	-5.3958	*
		AAHPERD	472	41.7	11.3		
4	Boy	Georgia	14	34.714	8.695	-3.5698	*
		AAHPERD	400	43.2	10.0		
7	Girl	Goergia	123	24.301	6.408	-2.3854	*
		AAHPERD	532	26.0	9.6		
8	Girls	Georgia	236	23.712	8.041	-7.9727	*
		AAHPERD	535	29.1	9.9		
9	Girls	Georgia	203	25.217	7.607	-6.5777	*
		AAHPERD	650	29.5	9.5		
0	Girls	Georgia	182	25.980	8.276	-8.4326	*
		AAHPERD	762	32.0	10.1		
1	Girls	Georgia	185	28.746	8.549	-7.9091	*
		AAHPERD	782	34.4	9.5		
2	Girls	Georgia	139	28.453	9.711	-8.4845	*
		AAHPERD	567	36.3	10.0		
3	Girls	Georgia	35	28.829	7.917	-4.8049	*
		AAHPERD	433	35.7	10.5		
4	Girls	Georgia	7	28.286	4.680	-4.8049	*
		AAHPERD	371	35.8	9.8		

* Significant at $p < .05$.

Table 71

Mean Standard Deviation and T-Test for Sit and Reach Scores for Georgia and AAHPERD Elementary School Children

Age	Sex	Test	N	Mean	SD	T Value
7	Boy	Georgia	121	25.620	5.427	0.9542
		AAHPERD	561	25.1	5.5	
8	Boy	Georgia	248	25.230	5.961	-0.6096
		AAHPERD	619	5.7		
9	Boy	Georgia	203	25.399	5.980	-0.4200
		AAHPERD	618	25.6	5.7	
10	Boys	Georgia	223	25.318	5.859	1.5801
		AAHPERD	800	24.6	6.5	
11	Boys	Georgia	169	25.923	6.538	2.0103 *
		AAHPERD	760	24.8	6.7	
12	Boys	Georgia	147	24.544	6.580	-1.9500
		AAHPERD	623	25.8	8.6	
13	Boys	Georgia	48	26.125	7.513	0.3732
		AAHPERD	474	25.7	7.6	
14	Boys	Georgia	13	28.692	8.199	0.2134
		AAHPERD	400	28.2	7.6	
7	Girls	Georgia	123	27.902	4.825	1.2090
		AAHPERD	534	27.3	5.6	
8	Girls	Georgia	237	27.249	5.629	-0.7824
		AAHPERD	535	27.6	6.0	
9	Girl	Georgia	203	27.315	6.320	-0.1668
		AAHPERD	635	27.4	6.3	
10	Girl	Georgia	183	28.415	6.151	1.5971
		AAHPERD	743	27.6	6.3	
11	Girl	Georgia	184	28.212	6.728	-0.5155
		AAHPERD	762	28.5	7.1	
12	Girl	Georgia	138	29.152	6.738	-0.6782
		AAHPERD	540	29.6	7.6	
13	Girls	Georgia	35	29.857	5.922	-0.6891
		AAHPERD	439	30.6	8.4	
14	Girls	Georgia	7	25.857	4.375	-3.9414 *
		AAHPERD	378	32.6	8.5	

* Significant at $p < .05$.

HIGHLIGHTS OF FINDINGS

SEX DIFFERENCES:

1. Mean scores for boys in all three grades (second, fourth, and sixth) were significantly better than girls when all variables were considered together.
2. Mean scores for girls were significantly higher for the sit and reach variable at each grade level.

SPECIALIST AND CLASSROOM TEACHER DIFFERENCES:

3. In each of the three grades, mean scores for the students taught by specialists were significantly better than those for children who had classroom teachers. for physical education when all variables were considered together.
4. The impact of the physical education specialists became more pronounced as the grade level increased as evidenced by the increase in the number of significant variables.

RIGHT AND LEFT HANDED DIFFERENCES:

5. No significant differences in mean scores between right and left handed students were recorded when all variables were considered together. However, right handed students tended to have better mean scores.

READING AND MATHEMATICS RELATIONSHIPS TO MOTOR PERFORMANCE VARIABLES:

6. A low but significant relationship was found between reading and mathematical abilities and motor performance variables in second, fourth, and sixth grades.
7. A closer relationship existed between motor performance variables and mathematics than with reading scores.
8. Shape-o ball and sit and reach variables had significant relationships with reading and mathematical abilities most frequently in second, fourth and sixth grades.

SELF CONCEPT RELATIONSHIP TO MOTOR PERFORMANCE VARIABLES:

9. A low but significant relationship existed between self concept and motor performance variables used in this study.
10. The 600 yard walk-run variable was one of the best predictors in second and fourth grades while the soccer wall volley variable ranked high in fourth and sixth grades.

AGE RELATIONSHIP WITH MOTOR PERFORMANCE VARIABLES:

11. A low relationship was found between age and the motor performance variables used in this study.
12. The soccer wall volley variable was one of the best predictors in second and fourth grades while shape-o ball reflected a strong relationship in fourth and sixth grades.

READING, MATHEMATICS, AND SELF CONCEPT RELATIONSHIPS:

13. The correlation between reading and mathematical abilities was very high while self concept scores were poor predictors for reading and mathematical abilities.

DIFFERENCES BETWEEN GEORGIA CHILDREN AND AAHPERD AND MINNESOTA CHILDREN:

14. In comparisons with other data, the AAHPERD children were significantly better in sit-ups, and Minnesota children were significantly better in performing the 600 yard walk-run and jump and reach tests.

15. No significant differences between AAHPERD children and Georgia children were reported for the sit and reach variable except for Georgia boys at age eleven and AAHPERD girls at age fourteen.

APPENDIX A

TEST BATTERY

Physical Fitness and Motor Ability

1. Jump and Reach

Purpose: The test measures the muscular power of the legs. It is often known as the test of explosive power.

Equipment: Jump-reach board or poster paper taped to the wall. Chalk (one inch in length) and a yard stick.

Marking: On the jump-reach board, or poster paper, mark off (in intervals of 1 inch) a length of 24 inches or more.

Directions:

a. Pupil faces the wall with toes touching the wall and with both hands extended overhead.

b. Reach evenly with both hands and mark the height of the reach with a piece of chalk.

c. Turn sideward to the wall (right or left side). Jump and reach with one hand to touch as far up the board or poster paper as possible, marking the height of the reach with chalk. The distance between the first and second marks on the wall is measured with a yard stick. The score is the difference between the reach while standing and while jumping.

d. Chalk should be held between the thumb and forefinger and should not extend beyond the forefinger.

e. Jump must be made from both feet without a hop or a double jump.

Number of Trials and Scoring:

a. Three successive trials are allowed.

b. Record scores to the nearest half inch. Record the best jump only.

Suggestions:

a. A number of chalkboards or sheets of poster paper can be attached to the wall at varying heights, depending upon the height of the pupils.

b. A yard stick can be used to measure the distance between the reach and the jump and reach.

c. Mark off the inches on each chalkboard or poster paper in order to eliminate measuring each student.

d. Leader stands on a chair near the chalkboard and indicates the number of inches jumped. Record the best jump only.

2. Sit-Up

Purpose: The purpose is to test abdominal strength and endurance.

Test Description: The pupil lies on his back with knees flexed, feet on floor, with the heels between twelve and eighteen inches from buttocks. The pupil crosses arms on chest placing hands on the opposite shoulder. His feet are held by his partner to keep them in touch with the testing surface. The pupil, by tightening his abdominal muscles, curls to the sitting position. Arm contact with the chest must be maintained. The sit-up is completed when elbows touch the thighs. The pupil returns to the down position until the midback makes contact with the testing surface.

The timer gives the signal "ready go", and the sit-up performance is started on the word "go". Performance is stopped on the word "stop."

The number of correctly executed sit-ups performed in sixty seconds shall be the score. Rest between sit-ups is allowed, and the pupil should be aware of this before initiating the test.

Rules:

a. Buttocks must remain on the floor.

b. Fingers must remain in contact with shoulders.

Equipment: Mat or other comfortable surface, a stop watch, 3-4 eighteen inch strings and masking tape.

Scoring: Record the number of correctly executed sit-ups that the pupil is able to do in sixty seconds.

Administrative Suggestions:

a. Because of the importance of the heel placement in relation to the buttocks, the teacher may wish to use a yard stick or precut measured yarn to determine this distance.

b. The supervising tester acts as the timer.

c. Partners will count and record each other's score. The supervising tester must carefully observe to assure that the sit-ups are being done correctly.

d. The partner is to keep the feet in contact with the testing surface. The partner may hold the feet, the ankles or the calves.

e. The pupil should remain in the curled position for each repetition (with head held forward).

3. Shape-O-Ball Test

Introduction: The test is designed to measure certain preceptual-motor abilities (shape recognition, perceptual match, and hand-eye coordination) which closely relate to academic readiness.

Administration: The test is to be administered individually and is not designed as a group test. The test administrator should place the Shape-O-Ball directly in front of the subject on a table of adequate height for the subject's age. The pieces should be scattered randomly at a point behind the ball, and the subject seated comfortably at the table.

The administrator should explain the task (place the pieces in the holes as fast as you can) and then let the subject practice until he/she indicates that he/she understands what is to be done.

Let the subject perform 3 trials with each trial being timed to the nearest second with a stopwatch. The timing should start when the administrator says "begin" and end when the last piece is successfully placed in the ball. If any trials exceed 4 minutes, the subject should be stopped and the 240 seconds recorded as the time for that trial. A SUBJECT'S SCORE ON THE TEST IS THE SUM OF THE THREE TRIALS.

Equipment

Stopwatch, shape-o-ball, table and chair.

4. Zig Zag Run

Purpose: To measure agility primarily and speed secondarily.

Facilities and Equipment: Stop watch, five cones. Zig zag course arrows should be drawn on the ground to indicate direction.

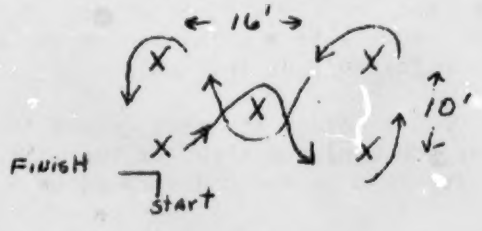
Directions: The event should be explained and demonstrated. A practice walk through should be taken by the student. The subject begins at the start and follows the prescribed course for three complete laps. The watch is stopped when the subject finishes his run at the end of the third lap.

Instructions: For the start of your run you may use a standing start. On the command to go, you run the prescribed course in a figure-of-eight fashion. Do not bump the cones as you round them and do not misplace them in any way. You complete three circuits of the course and continue to run past the finish mark. If you foul or fail to run the prescribed course, you will be required to run again.

Score: The final score is the elapsed time to the nearest tenth of a second which is required to run the prescribed course three times (i.e., one trial).

Testing Personnel: One trained assistant to supervise the testing station and to time and recore the scores.

(See diagram)



5. Flexed Arm Hang

Equipment: Stopwatch, chinning bar that can be adjusted in height, chair.

Directions: Bar should be placed at approximately same height as that of students being tested. Two spotters, one in front and one in back, help pupil raise his body so that chin is above bar. Elbows are flexed and check close to bar. Feet must be clear of floor. If a chair is used it should be removed immediately. Grip must be reverse hand grip facing body. Pupil holds this position as long as possible or ninety seconds possible.

Rules:

a. start timing as soon as student is in proper position and released by spotters.

b. Stop timing when:

(1) chin touches bar,
(2) head tilts back, or
(3) chin drops below bar

c. Knees may not be raised

d. Legs may not be kicked

e. Arm may be extended across performer's legs if legs start to swing.

f. Only one trial is permitted.

Scoring: Record to the nearest whole second, that the student maintains proper position.

o. Soccer Wall Volley

Purpose: The test determines how rapidly a rubber soccer ball can be kicked against a wall within a 30 second time interval. This skill represents the basic eye-foot coordination involving accuracy and control which is necessary in many kicking games.

Equipment: Well-inflated, regulation size, rubber soccer ball; stopwatch; flat walled surface; flat ground surface.

Marking: Draw a restraining line 6 feet from the wall.

Directions:

a. Begin behind the restraining line.

b. On the signal 'READY-GO', the ball is kicked against the wall as rapidly as possible for 30 seconds.

c. Any kind of kick may be used.

d. The hands may be used to retrieve the ball.

e. Any time the ball is kicked, the supporting leg must be behind or on the restraining line.

Number of Trials and Scoring: One pre-trial is allowed. Two trials are given with the sum of the two recorded. The score for each trial is the number of legal hits against the wall.

Suggestions:

a. Coach the pupils to use the feet to stop or trap the ball on the rebound wherever necessary. Bending over and using the hands to gain control only consumes time. Encourage the pupils to run after the ball when losing control.

b. Although any type of kick is allowed, using the inside of the foot permits better control.

c. Select a good wall area that is free of obstacles.

d. Try to allow 9 feet between each pupil being tested.

e. Demonstrate the test first so that pupils can see exactly how the test is done. Assign duties for counting the number of fair hits, checking on the restraining line, and recording the score.

7. Sit and Reach

Purpose: The purpose is to test the flexibility of the low back and posterior thigh.

Test Description: The pupil removes shoes and assumes the sitting position with the knees fully extended and the feet against the apparatus shoulder width apart. The arms are extended forward with the hands placed one on top of the other. The pupil reaches directly forward, palms down, along the measuring scale. In this position, the pupil slowly stretches forward four times and holds the position of maximum reach on the fourth count. The position of maximum reach must be held for one second with knees in full extension while the feet are in contact with the apparatus. The pupil receives one four count trial.

Equipment: The standard test apparatus shall consist of a bench or box with a measuring scale where 23 cm is at the level of the feet. The testing apparatus should be placed against a wall or other firm vertical surface.

Scoring: The score is the maximum distance reached measured to the nearest cm.

Administrative Suggestions:

a. The teacher can improve the validity and reliability of individual scores by providing sufficient time and instruction for warm-up. Slow sustained static stretching of the low back and posterior thighs preceding the test is suggested.

b. If the hands reach out unevenly, the test trial must be repeated.

c. If the knees become flexed, the trial must be repeated. The tester can monitor this by placing his hand lightly across the pupil's knees.

8. 600 Yard Walk-Run

Purpose: The test measures cardiovascular endurance.

Marking: A square area (50 yds. x 50 yds.) is selected on a flat freshly mowed field.

Directions:

a. Use a standing start.

b. At the signal "READY-GO", the pupils start running and the watch is started. The running may be interspersed with walking.

c. A card is handed each runner when he/she crosses the finish line indicating their order of finishing. At the same time the recorder marks the time in order as called by the timer on a scratch sheet.

d. Runners present their card to recorder who registers their name/number beside their respective time.

Number of Trials and Scoring: One trial is permitted and the time is recorded in minutes and full seconds at the completion of three laps.

Suggestions:

a. Have the runners walk for a period of time after completing the test.

b. Try to select an area that is free from obstacles and that has as few turns as possible. If available, use a hard surface area.

9. The Piers-Harris Children's Self Concept Scale

Administration:

a. Before distributing the scale, the examiner should talk to the students about the value of finding out how boys and girls really feel about themselves, in order to help them, and the necessity, therefore, for a completely honest response rather than a socially desirable one. This could be phrased as "answer the items as you really feel you are, not as you think you ought to be or others want you to be. Use the example "Do you like ice cream?" It should be stressed that this is not a test, that there are no right or wrong answers, that results will not affect their school grades and that they will be kept confidential.

b. When the scale is distributed, the examiner should check to make sure every child has a pencil and then show the class where and how to fill out the identifying data. He should then have them turn to the instructions and read these aloud.

c. It should be stressed that the students should circle either yes or no for all items. There should be no double circles, even if some items are hard to decide. It has been found helpful to have a proctor go up and down the aisles to make sure all children are marking the items correctly and keeping up with the examiner.

d. The examiner should read each item clearly twice without haste, but not so slowly that second thoughts or distractions will occur. After a few items, the examiner can usually determine the optimal pace for that group. A few moments can be given at the end for slower members to finish.

e. One or two words in the scale may be difficult for younger groups (i.e., unpopular) but have been retained in that form to eliminate a double negative. These may be defined. It is also permissible to answer one or two questions at the beginning, particularly with reference to the all-or-none quality of the items. It should be explained that it is recognized that everyone feels differently at different times in different situations, but that they should mark the item the way they generally feel. Additional questions are usually unnecessary and should be discouraged.

10. CRT Reading Score

11. CRT Mathematic Score

BIBLIOGRAPHY

AAHPERD Lifetime Health Related Physical Fitness Test Manual. Reston, Virginia: American Alliance for Health, Physical Education, Recreation, and Dance, 1980.

Bendel, Robert B. and A. A. Afifi. "Comparison of Stopping Rules in Forward 'Stepwise' Regression," Journal of American Statistical Association, 72:46-53, March, 1977.

Georgia Criterion Referenced Test for Reading, Mathematics, and Career Education, 1981.

Hanson, Margie R. Motor Performance Testing of Elementary School Age Children. Unpublished Doctoral Dissertation. University of Washington, Seattle, 1965.

Piers-Harris Children's Self-Concept Scale. Nashville, Tennessee: Counselor Recordings and Tests, 1969.

Texas Physical Fitness-Motor Ability Test. Austin, Texas: The Governor's Commission on Physical Fitness, n.d.

Thomas, Jerry R. and Brad S. Chissom. Directions for the Administration of the Shape-o-Ball Test, A Perceptual-Motor Task. Handout from studies using the Shape-o-Ball (Tupperware, A Division of Dart Industries, Orlando, Florida, 32802.)

Tupperware Educational Services, "Shape-o-Ball," Orlando, Florida, 32802.

Statistical Packages

BMDP3D: Hotelling T^2 Tests and Subsequence t-Test on Individual Variables.

SPSS Batch System: Stepwise Multiple Regression, Pearson Correlation, t-Tests, and Statistics and Frequencies.